

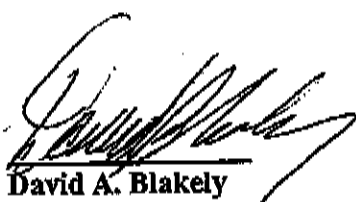
# 2003 3<sup>rd</sup> QUARTER GROUNDWATER MONITORING REPORT

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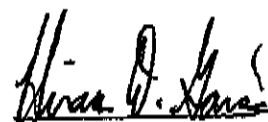
**FORMER ANGELES CHEMICAL  
COMPANY FACILITY  
8915 SORENSEN AVENUE  
SANTA FE SPRINGS, CALIFORNIA**

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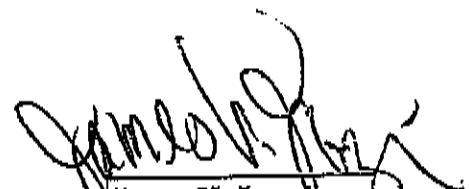
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**1.0) INTRODUCTION**

Blakely Environmental Investigations, Inc. (BEI) was contracted by Greve Financial Services ((310) 753-5770) to perform quarterly groundwater monitoring at the former Angeles Chemical Company (ACC), Inc. facility located at 8915 Sorensen Avenue, Santa Fe Springs, California (See Figure 1, Site Location Map). The quarterly groundwater monitoring was requested by the Department of Toxic Substances Control (DTSC) correspondence dated September 18, 2001. This report presents the results of the 2003 3<sup>rd</sup> quarter monitoring episode performed from September 16 through 18, 2003.

**2.0) SITE LOCATION AND HISTORY**

The site is approximately 1.8 acres in size and completely fenced. The site is bound by Sorensen Avenue on the east, Air Liquide Corporation to the north and northwest, Plastall Metals Corporation to the north, and a Southern Pacific Railroad easement and McKesson Chemical Company to the south.

The property was owned by Southern Pacific Transportation Company and was not developed until 1976.

The ACC has operated as a chemical repackaging facility since 1976. A total of thirty-four (34) underground storage tanks (USTs) existed beneath the site. Two (2) USTs, one gasoline and one diesel, and sixteen (16) chemical USTs were excavated and removed under the oversight of the Santa Fe Springs Fire Department. All 16 remaining chemical USTs were decommissioned in place and slurry filled.

In January 1990, SCS Engineers, Inc. (SCS) conducted a site investigation. SCS advanced eight borings from 5' below grade (bg) to 50' bg. Soil samples collected and analyzed identified benzene, 1,1-Dichloroethane (1,1-DCA), 1,1-Dichloroethene (1,1-DCE), MEK, methyl isobutyl ketone (MIBK), toluene, 1,1,1 Trichloroethane (1,1,1-TCA), Tetrachloroethylene (PCE), and xylenes at detectable concentrations.

In June 1990, SCS performed an additional site investigation at the site by advancing six additional borings advanced from 20.5' bg to 60' bg. A monitoring well (MW-1) was also installed. Soil sample analysis identified detectable concentrations of the above mentioned VOCs in addition to acetone and methylene chloride. Dissolved benzene, 1,1-DCA, 1,1-DCE, PCE, Trichloroethylene (TCE), and trans-1,2-dichloroethene were detected in MW-1 above maximum contaminant levels.

Between 1993 and 1994, SCS performed further testing at the site. Soil samples were collected from nine borings. Five borings were converted to groundwater monitoring wells MW-2, MW-3, MW-4, MW-6, and MW-7 (See Figure 2, Well Location Map). The predominant compounds detected in soil were acetone, MEK, MIBK, PCE, toluene, 1,1,1-TCA, TCE, and xylenes. Groundwater sample collection performed in

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February 1994 by SCS identified the following using EPA method 624 (laboratory results included in Remedial Investigation Report dated August 1994 by SCS):

Component Analyzed	MW-1	MW-2	MW-3	MW-4	MW-6	MW-7
Benzene	194	<100	68	111	795	46
1,1-DCA	649	1,130	85	1,410	2,260	2,130
1,2-DCA	100	<100	<50	<100	140	31
1,1-DCE	2,210	2,460	2,800	806	1,240	151
Ethylbenzene	333	1,720	185	1,180	910	45
Methylene Chloride	1,220	2,980	6,530	4,760	21,400	<50
1,1,1-PCE	2,662	2,150	5,370	3,320	2,130	134
Toluene	560	7,390	579	12,700	13,500	398
1,1,1-TCA	9,370	3,470	4,430	36,200	114,000	90
TCE	7,160	3,040	1,730	14,300	1,320	45
Xylenes	1,750	7,390	1,014	4,362	4,710	186
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

In 1996, SCS performed separate soil vapor extraction pilot testing beneath the site at approximately 10' bg and 22' bg. Laboratory analysis identified maximum soil vapor gas concentrations as 1,1,1-TCA (30,300 ppmV) with detectable concentrations of 1,1-DCE, TCE, methylene chloride, toluene, PCE and xylenes. The maximum radius of influence from the various extraction units used were measured as 35 feet at 10' bg and 80 feet at 22' bg.

In November 1997, SCS performed a soil vapor survey at the site. Soil vapor samples were collected at twenty-three locations at 5' bg. In addition, soil vapor samples were collected at 15' bg in five of the twelve sampling points. The soil vapor survey identified maximum volatile organic compound (VOC) contaminants near the railroad tracks on site, the location where a rail tanker reportedly had an accidental release.

In July 2000, BEII contracted BLC Surveying, Inc. to perform a site survey. Well locations were recorded using the California Plane coordinate systems. A copy of the survey is on file with the DTSC.

In September 2000, Blaine Tech Services, Inc. gauged the six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) under the supervision of BEII. Free product (FP) was identified in monitoring well MW-4 at 0.21-feet in thickness. Approximately 0.5 liters of FP were removed from the well and placed in a sealed 55-gallon drum.

BEII performed a soil vapor gas survey at the site from November 27 to December 1, 2000. A total of 36 soil vapor sample points, labeled SV1 through SV36, were selected by BEII and approved by the DTSC for analysis. Two discrete soil vapor samples were collected from each soil vapor sample point, one at 8' bg and one at 20' bg. SV1 was an exception since the first soil vapor sample was collected at 10' bg instead of

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8' bg. Based on the soil vapor sample results, BEII identified relatively low level concentrations of VOCs in the silty clay soils at 8' bg. However, the concentrations of VOCs are significantly higher in the sandy soils at 20' bg in OU-1. Results were submitted to the DTSC by BEII in a Report of Findings dated January 10, 2001 with laboratory reports (BEII Report of Findings dated January 10, 2001).

On November 30, 2000, Blaine Tech Services, Inc. (Blaine) was contracted to perform groundwater sampling at the site. Groundwater monitoring wells MW-4 and MW-6 identified were not sampled due to the presence of free product. These wells were installed to monitor a perched groundwater body to the north. Free product was identified in MW-1 during sample collection, upon completion of well purging. The potentiometric groundwater level was above the well screen. Groundwater purging lowered the potentiometric level below the screened interval, allowing free product to enter. Groundwater sample analysis identified thirteen constituents of concern (COCs) in the dissolved phase as VOCs only. Laboratory analysis of metals and SVOCs identified concentrations below allowable levels for those constituents. Results were submitted by BEII to the DTSC in a Report of Findings dated January 10, 2001 with laboratory reports.

The remaining USTs have been excavated or slurry filled for closure under the supervision of the Santa Fe Springs fire Department. A report was be submitted to the DTSC upon completion by EREMCO.

BEII performed a soil gas survey on the ACC site from January 14 to January 17, 2002. The purpose of the soil gas survey was to determine the lateral extent of VOC soil vapors in the vadose zone along the eastern, northern, and southern property line of the site (OU-1 an OU-2). In addition, BEII performed a SGS on June 13, 2002 on the Air Liquide property to determine the lateral extent of VOC soil vapors in the vadose zone north of the ACC facility (OU-1). Based on the soil gas survey results, BEII identified relatively low level concentrations of VOCs in the silty clay soils at 5' bg, 7'bg, 8' bg, 10' bg, and 12' bg (See Table 1 through Table 3 for soil gas results). However, the concentrations of VOCs are significantly higher in the sandy soils at 20' bg, which are more permeable and conducive to soil vapor migration. Furthermore, VOC soil gas concentrations were higher along the southern property line (OU-2) than along the east and north property line. Results were submitted by BEII to the DTSC in a Report of Findings dated October 15, 2002 with laboratory reports.

BEII advanced two soil borings (BSB-1 and BSB-2) and installed two groundwater monitoring wells (MW-8 and MW-9) on the ACC site from June 5 to June 7, 2002. The purpose of the drilling was to help define the lateral and vertical extent of impacted soil along the eastern ACC property line and to help determine the extent of impacted groundwater. Soil borings BSB-1 and BSB-2 were advanced to 50' bg and 30' bg, respectively. Monitoring wells MW-8 and MW-9 were installed to 40.5' bg and 45.5' bg, respectively. Soil sample results identified only four VOCs in the upper clay layer from 0' to approximately 20' bg. Total VOC soil concentrations averaged 56.66 µg/kg in the upper clay zone. Soil sample results identified elevated VOC concentrations in sand

with lower to no detectable concentrations in the underlying clay layer. The average total VOC soil concentrations were 53,125  $\mu\text{g/kg}$  in the permeable sand layer. The underlying clay layer identified an average total VOC soil concentration of 408  $\mu\text{g/kg}$ . Results were submitted by BEI to the DTSC in a Report of Findings dated October 15, 2002 with laboratory reports.

BEI advanced eight soil borings (BSB-3 through BSB-10) from 40' bg to 45' bg in August 2002 to help determine the extent of impacted soil. Laboratory results were submitted by BEI to the DTSC.

In November and December of 2002, BEI advanced seven borings (BSB-11 through BSB-17) and installed twelve monitoring wells (MW-10 through MW-21) to help define the extent of VOC impacted soil and groundwater. Monitoring well MW-1 was abandoned. Laboratory results were submitted by BEI to the DTSC.

In late June of 2003, BEI installed five monitoring wells (MW-22 through MW-26) to help define the extent of VOC impacted soil and groundwater. Monitoring wells MW-2, MW-3, and MW-7 were abandoned. Laboratory results were submitted by BEI to the DTSC.

### 3.0) REGIONAL GEOLOGY/HYDROGEOLOGY

The site is located near the northern boundary of the Santa Fe Springs Plain within the Los Angeles Coastal Plain at an elevation of approximately 150 feet above mean sea level. Surficial sediments consist of fluvial deposits composed of inter-bedded gravel, sand, silt, and clay. Available data from California Water Resources Bulletin No. 104 (June 1961) indicate that the surficial sediments may be Holocene and/or part of the upper Pleistocene Lakewood Formation, which ranges from 40 to 50 feet thick beneath the site. The Lakewood Formation has lateral lithologic changes with discontinuous permeable zones that vary in particle size. Stratified deposits of sand, silty sand, silt, and fine gravel comprising the upper portion of the lower Pleistocene San Pedro Formation underlies the Lakewood Formation.

The site lies within the Central Basin Pressure area, a division of the Central Ground Water Basin, which extends over most of the Coastal Plain. The Gasper aquifer, a part of the basal coarse unit of Holocene deposits, is found within old channels of the San Gabriel and other rivers. The Gasper aquifer may be 40-feet in thickness, with its base at a depth of about 80 to 100-feet bg. The underlying Gage aquifer is found within the Pleistocene Lakewood Formation. The Hollydale aquifer is the uppermost regional aquifer in the Pleistocene San Pedro Formation. Bulletin 104 indicates that this aquifer averages approximately 30-feet in thickness in this area, with its top at a depth of about 70 feet bg. The major water producing aquifers in the region are the Lynwood aquifer located approximately 200-feet bg, the Silverado aquifer located at approximately 275-feet bg, and the Sunnyside aquifer located at approximately 600-feet bg.

#### 4.0) SITE GEOLOGY/HYDROGEOLOGY

SCS identified silty clays with some minor amounts of silt and sand in the shallow subsurface from surface grade to approximately 15' bg. Below the silty clay, poorly sorted coarse-grained sand and gravel from 15' bg to 26' bg. SCS referenced a less permeable silty clay layer between 35' and 50' bg, which contained stringers of fine sand and silt that is part of the Gaspar/Hollydale aquifer.

A perched aquifer was encountered at approximately 23' bg by SCS and referenced as such by SCS. Based on a review of McKesson files, Harding Lawson Associates (HLA) stated that in January 1975 prior to McKesson operating their neighboring facility, no groundwater was encountered to a depth of 45' bg beneath the McKesson property. In March 1986, during operation of the neighboring McKesson facility, groundwater was encountered at 22' bg beneath the McKesson property as stated by HLA. Based on the HLA statements, BEII concludes with SCS that the first encountered groundwater is part of a shallow perched aquifer. The sediments within this perched aquifer appear to be consistent with the Gaspar Aquifer. Monitoring wells MW-4, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-16, MW-18, MW-19, MW-22, and MW-26 will be noted as Gaspar monitoring wells with groundwater at approximately 32' bg. The water identified in monitoring well MW-4 at 26.41' bg is more than likely residual groundwater contained in the well sump and will not be incorporated in the gradient.

SCS also referenced that the Gaspar/Hollydale Aquifer was encountered at 20' to 35' bg beneath the site. Further review of Bulletin 104 by BEII and DTSC, identified that the SCS referenced Gaspar/Hollydale Aquifer was in fact the Gage/Hollydale Aquifer. Monitoring wells MW-2, MW-3, MW-13, MW-14, MW-15, MW-17, MW-20, MW-21, MW-23, MW-24, and MW-25 will be noted as Gage/Hollydale monitoring wells since they are screened in that deeper groundwater which is now at approximately 40' bg.

The groundwater gradient flowed historically to the southwest as identified by SCS. In September 2003, the shallow groundwater was identified at depths between 31.68' bg to 39.87' bg beneath the site. The potentiometric groundwater flow direction of this shallow zone (Gaspar Aquifer) is away from the high point (MW-10) with a hydraulic gradient of 0.025 ft/ft to the north and 0.056 to 0.11 ft/ft to the south (See Figure 3). Groundwater in the deeper Gage/Hollydale was identified at depths between 39.55' bg to 44.35' bg beneath the site. The potentiometric groundwater flow in the Gage/Hollydale Aquifer is to the west-southwest direction with a hydraulic gradient of 0.01 ft/ft (See Figure 4).

#### 5.0) GROUNDWATER MONITORING PROTOCOL

The purpose of the proposed groundwater monitoring was to provide data regarding the piezometric surface, water quality, and the presence of free product (FP), if

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any on a quarterly basis to the DTSC. Groundwater monitoring consisted of such activities as water level measurement, well sounding for detection of FP, collection of groundwater samples, field analysis, laboratory analysis, and reporting. The proposed work was performed as follows:

The depth to groundwater was measured in each well using a decontaminated water level indicator capable of measuring to within 1/100th of a foot. Prior to and following collection of measurements from each well, the portions of the water level indicator entering groundwater were decontaminated using a 3-stage decontamination procedure consisting of a potable wash with water containing Liquinox soap followed by a double purified water rinse. Wells were monitored in the order of least contaminated to the most contaminated based on past analysis. For the ACC wells, the following order of wells was followed: MW-23, MW-24, MW-25, MW-14, MW-17, MW-20, MW-15, MW-21, MW-13, MW-12, MW-9, MW-16, MW-22, MW-26, MW-18, MW-11, MW-10, MW-4, MW-6, and MW-8.

The well box and casing were opened carefully to preclude debris or dirt from falling into the open casing. Once the well cap was removed, the water level indicator was lowered into the well until a consistent tone was registered. Several soundings were repeated to verify the measured depth to groundwater. The depth of groundwater was measured from a reference point marked on the lip of each well casing. A licensed surveyor has surveyed the elevation of each reference point. The result was recorded on the field sampling log for each well. Other relevant information such as physical condition of the well, presence of hydrocarbon odors, etc. was also recorded as appropriate on the field sampling log.

The well sounder used for this project was equipped to measure free product (FP) layers thicker than 0.1 inches. FP was indicated as light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL).

Groundwater purging was conducted immediately following the collection of a groundwater depth measurement from all monitoring wells. Groundwater samples were analyzed for the following constituents (new wells for TPH-gas and VOCs only):

- Volatile organic compounds (VOCs) using EPA Method 8260B to include all Tentatively Identified Compounds (TICs).
- Total Petroleum Hydrocarbons as gasoline (TPH-gas) using EPA Method 8015 modified.
- Total dissolved solids (TDS) using EPA Method 160.1.
- Nitrates, chloride, sulfate, sulfide, ferrous iron, and manganese using EPA Methods 352.1, 325.3, 375.4, 376.1, 7380, and 7460, respectively.
- Alkalinity, carbonates, and bicarbonates using EPA Methods 310.1 and Standard Method 4500.
- Total organic carbon (TOC) and dissolved organic carbon (DOC) using EPA Method 415.1.



### 5.1) Well Purging and Measurement of Field Parameters

Wells were purged in the above mentioned order (see Section 5.0) to minimize the potential for cross contamination. The wells were purged by Blaine Tech Services, Inc (Blaine) and sampled by BEII from September 16 through 18, 2003 in the presence of Mr. Sanford Britt of the DTSC. The purge protocol was presented in the Field Sampling Plan as Appendix A in the Groundwater Monitoring Work Plan dated October 23, 2001 and submitted to the DTSC.

Prior to purging, casing volumes was calculated based on total well depth, standing water level, and casing diameter. One casing volume was calculated as:

$$V = \pi(d/2)^2 h \times 7.48$$

where:

V is the volume of one well casing of water (in gallons,  $1 \text{ ft}^3 = 7.48$  gallon);

d is the inner diameter of the well casing (in feet); and

h is the total depth of water in the well - the depth to water level (in feet).

A minimum of three casing volumes of water was purged from each well. Water was collected into a measured bucket to record the purge volume. All purged groundwater was containerized in 55-gallon hazardous waste drum for disposal at a later date.

After each well casing volume was purged; water temperature, pH, specific conductance (EC), and turbidity were measured using field test meters and the measurements were recorded on Well Monitoring Data Sheets (See Appendix A). Samples were collected after these parameters have stabilized; indicating that representative formation water has entered the well. The temperature, pH, and specific conductance should not vary by more than 10 percent from reading to reading. Turbidity should be less than 5 NTUs, however, the purging process stirred up silty material in each well which made the turbidity measurements of 5 NTUs unattainable. Groundwater samples were collected after water levels recharged to 80 percent of the static water column. Notations of water quality including color, clarity, odors, sediment, etc. were also noted in the data sheets.

All field meters were calibrated according to manufacturers' guidelines and specifications before and after each day of field use. Field meter probes were decontaminated before and after use at each well. The pH, conductivity, and temperature were measured with a Myron-L Ultra Meter and turbidity was measured with a HF Scientific DRT-15C meter. The calibration standards used for pH were 4 and 7 with expiration dates of December 2003. Conductivity was

calibrated to a 3900  $\mu$ s standard with an expiration date of December 2003. A 0.02 NTU standard was used to calibrate the turbidity with an expiration date of December 2003.

### 5.2) Well Sampling

Groundwater samples were collected by lowering a separate disposable bailer into each well. Groundwater was transferred from the bailer directly into the appropriate sample containers with preservative, if required, chilled, and processed for shipment to the laboratory. When transferring samples, care was taken not to touch the bailer-emptying device to the sample containers. Water samples were transported to Southland Technical Services, Inc., a certified laboratory by the California Department of Health Services (Cert. #1986) to perform the requested analysis.

Groundwater samples were collected from monitoring wells MW-23, MW-24, MW-25, MW-14, MW-17, MW-20, MW-15, MW-21, MW-13, MW-12, MW-9, MW-16, MW-26, MW-18, MW-11, MW-10 only. Monitoring wells MW-6, MW-8, and MW-19 identified FP as LNAPL at a thickness of 0.08', 0.42' and 0.83', respectively. The FP thickness in MW-6 is assumed based on the depth of the well bottom since no water was identified in the well.

Vials for VOC and TPH analysis were filled first to minimize aeration of groundwater collected in the bailer. The laboratory provided vials containing sufficient HCl preservative to lower the pH to less than 2. The vials were filled directly from the bottom-emptying device. The vial was capped with a cap containing a Teflon septum. Blind duplicate samples for the laboratory were labeled as "MW-1" and "MW-2" and were collected from monitoring wells MW-24 and MW-15, respectively. All vials were inverted and tapped to check for bubbles to insure zero headspace.

New nitrile gloves were worn during by sampling personnel for each well to prevent cross contamination of the samples. A solvent free label was affixed to each sample container/vial denoting the well identification, date and time of sampling, and an identifying code to distinguish each individual bottle.

### 5.3) Sample Handling

VOA vials, including laboratory trip blanks, were placed inside of one new Ziplock bag per well and stored in a cooler chilled to approximately 4°C with bagged ice. Water samples were logged on the chain-of-custody forms immediately following sampling of each well to insure proper tracking through analysis to the laboratory.

#### 5.4) Waste Management

FP, purged groundwater, and decontamination water were stored in sealed 55-gallon drums for a period not to exceed 90 days. Stored wastes will be profiled for hazardous constituents and characterized as Non-Hazardous, California Hazardous, or RCRA Hazardous, as appropriate. Any transportation of waste will be under appropriate manifest.

#### 6.0) FREE PRODUCT

Monitoring wells MW-6, MW-8, and MW-19 identified FP as LNAPL at a thickness of 0.08-feet, 0.42-feet, and 0.83-feet, respectively. A total of 2.5 gallons of FP was recovered from MW-6, 11 gallons of FP was recovered from MW-8, and 1.5 gallons of FP was recovered from MW-19 to date.

Laboratory analysis of the FP was performed in June 2002 and identified dissolved TPH-gas at 812,000 mg/L from MW-6 and 801,000 mg/L from MW-8. Concentrations of dissolved TPH as diesel were also identified in FP as 53,400 mg/L from MW-6 and 56,600 mg/L from MW-8. No detectable concentrations of TPH as motor oil were identified in FP collected from both wells. Previous laboratory analysis of FP collected from monitoring well MW-6 identified 1,1,1-TCA at 28,100 mg/L, 1,2,4-Trimethylbenzene at 22,100 mg/L, Xylenes at 10,370 mg/L, Toluene at 9,010 mg/L, 1,3,5-Trimethylbenzene at 5,400 mg/L, and Ethylbenzene at 4,320 mg/L.

#### 7.0) GROUNDWATER SAMPLE RESULTS

Groundwater samples collected from the shallow zone (Gasper) monitoring wells MW-9, MW-10, MW-11, MW-12, MW-16, MW-18, and MW-26 in September 2003 contained TPH-gas ranging from 69,600 µg/L in MW-10 to 1,280 µg/L in MW-9. Laboratory results are included as Appendix B. Dissolved TPH-gas concentrations averaged 29,706 µg/L in the shallow Gasper Aquifer, a decrease from the 47,969 µg/L average identified in March 2003. See Table 1 and Figure 5 for dissolved TPH-gas concentrations.

Groundwater samples collected from the deeper zone (Gage/Hollydale) monitoring wells MW-13, MW-14, MW-15, MW-17, MW-20, MW-21, MW-23, MW-24, and MW-25 in September 2003 contained TPH-gas ranging from 998 µg/L in MW-21 to non-detect (<50 µg/L) in MW-17, MW-20, MW-23, MW-24, and MW-25. The concentrations of dissolved TPH-gas averaged 185 µg/L in the deeper Gage/Hollydale Aquifer, a decrease from the 3,793 µg/L average identified in March 2003. See Table 1 and Figure 6 for dissolved TPH-gas concentrations.

Concentrations of dissolved BTEX ranged between 20,540 µg/L in MW-26 to <69.5 µg/L in MW-12 from the shallow Gasper Aquifer (See Figure 5 and Table 2). The less than value includes those concentrations reported as Practical Quantitation Limit

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(PQL), which is defined as the method detection limit multiplied by the dilution factor (See Appendix B for laboratory results). The average dissolved BTEX concentration in the Gasper from the 2003 third quarter sampling was  $<7,860 \mu\text{g/L}$ , an increase from  $<6,330 \mu\text{g/L}$  from the previous sampling episode.

Dissolved BTEX in the deeper Gage/Hollydale Aquifer ranged between  $161.5 \mu\text{g/L}$  in MW-21 to  $<4 \mu\text{g/L}$  in MW-17, MW-20, MW-23, MW-24, and MW-25 (See Figure 6 and Table 2). The 2003 third quarter sample episode identified an average dissolved BTEX concentration of  $<23 \mu\text{g/L}$  in the Gage/Hollydale, a decrease from  $<486 \mu\text{g/L}$  the previous sampling episode.

Groundwater sample results from the shallow Gasper Aquifer identified relatively high VOC concentrations compared to the low VOC concentrations in the deeper Gage/Hollydale Aquifer (See Table 2 and Appendix B for laboratory results).

Concentrations of dissolved PCE and TCE were identified at a maximum concentration of  $2,930 \mu\text{g/L}$  from MW-26 and  $2,530 \mu\text{g/L}$  from MW-16, respectively, in the shallow Gasper zone (See Figure 7). The average dissolved PCE and TCE concentrations for the third quarter 2003 were  $<571 \mu\text{g/L}$  and  $<762 \mu\text{g/L}$ , respectively. Maximum concentrations of dissolved PCE and TCE in the Gage/Hollydale were detected as  $232 \mu\text{g/L}$  and  $180 \mu\text{g/L}$ , respectively in groundwater collected from MW-21 (See Figure 8). The third quarter average PCE and TCE dissolved concentrations in the deeper Gage/Hollydale zone were  $<60 \mu\text{g/L}$  and  $<38 \mu\text{g/L}$ , respectively.

Dissolved concentrations of 1,1,1-TCA were identified in the shallow Gasper Aquifer at a maximum of  $4,510 \mu\text{g/L}$  in MW-10 (See Figure 7). Monitoring well MW-18 located downgradient of MW-10 identified dissolved 1,1,1-TCA as  $420 \mu\text{g/L}$ . The average dissolved 1,1,1-TCA concentration in the Gasper Aquifer was identified as  $<978 \mu\text{g/L}$  this quarter, a decrease from  $<7,169 \mu\text{g/L}$  identified the previous quarter. Lower concentrations of dissolved 1,1,1-TCA were detected in the deeper Gage/Hollydale Aquifer at a maximum of  $150 \mu\text{g/L}$  in MW-21 (See Figure 8). No significant concentrations of 1,1,1-TCA were detected in all other Gage/Hollydale Aquifer monitoring wells.

Groundwater samples were also analyzed for 1,4-Dioxane, a preservative used in 1,1,1-TCA to prolong its shelf life. However, 1,4-Dioxane is more miscible in groundwater than 1,1,1-TCA and will often lead the dissolved 1,1,1-TCA plume. Monitoring well MW-9 identified the maximum detectable concentration of dissolved 1,4-Dioxane at  $7,150 \mu\text{g/L}$  in the Gasper Aquifer. Monitoring wells MW-10, MW-11, MW-16, MW-18, and MW-26 identified dissolved 1,4-Dioxane concentrations between  $<10,000 \mu\text{g/L}$  and  $<1,250 \mu\text{g/L}$  due to high dilution factors. The maximum detectable dissolved 1,4-Dioxane concentration in the Gage/Hollydale Aquifer was  $88 \mu\text{g/L}$  in MW-20. Gage/Hollydale monitoring wells MW-13, MW-14, MW-15, MW-17, MW-21, MW-

23, MW-24, and MW-25 contained dissolved 1,4-Dioxane concentrations between  $<250$   $\mu\text{g/L}$  and  $<50$   $\mu\text{g/L}$  due to dilution factors.

Concentrations of dissolved chlorinated VOC daughter products were relatively elevated compared to their respective parent VOCs and also showed a trend of higher dissolved concentrations in the shallow Gasper Aquifer compared to the deeper Gage/Hollydale Aquifer.

1,1-DCA is a daughter product from reductive dehalogenation of 1,1,1-TCA and from carbon-carbon double bond reduction of 1,1-DCE, another daughter product. Dissolved 1,1-DCA concentrations were identified between 505  $\mu\text{g/L}$  and 47,400  $\mu\text{g/L}$  in the Gasper Aquifer (See Figure 7). The greatest dissolved 1,1-DCA concentration was observed in MW-10. The average dissolved 1,1-DCA concentration in the shallow Gasper zone was identified as 15,145  $\mu\text{g/L}$  this quarter, an increase since the previous quarter average of 11,693  $\mu\text{g/L}$ . Dissolved 1,1-DCA concentrations in the Gage/Hollydale Aquifer ranged between  $<2$   $\mu\text{g/L}$  and 1,370  $\mu\text{g/L}$  (See Figure 8). Monitoring well MW-21 located along the southwest property boundary contained the highest dissolved 1,1-DCA concentrations in the Gage/Hollydale Aquifer as 1,370  $\mu\text{g/L}$ . The second highest dissolved 1,1-DCA concentration identified from MW-14 was only 101  $\mu\text{g/L}$ . The average dissolved 1,1-DCA concentration in the Gage/Hollydale Aquifer this quarter was  $<178$   $\mu\text{g/L}$ , a decrease from the second quarter average ( $<261$   $\mu\text{g/L}$ ).

Dissolved 1,1-DCE, a daughter product of the dehydrohalogenation of 1,1,1-TCA and reductive dehalogenation of TCE, was identified at concentrations ranging from 14.5  $\mu\text{g/L}$  to 5,600  $\mu\text{g/L}$  in the shallow Gasper zone (See Figure 7). The maximum dissolved 1,1-DCE concentration was observed in MW-26. The next largest dissolved 1,1-DCE concentration was identified as 4,260  $\mu\text{g/L}$  in groundwater collected from MW-18. The average dissolved 1,1-DCE concentration in the Gasper Aquifer this quarter was 2,396  $\mu\text{g/L}$ , a decrease from the previous average of 4,134  $\mu\text{g/L}$  in June 2003. Dissolved 1,1-DCE concentrations in the Gage/Hollydale Aquifer ranged between  $<2$   $\mu\text{g/L}$  and 1,800  $\mu\text{g/L}$  (See Figure 8). Gage/Hollydale monitoring well MW-21 located along the southwest property boundary contained the maximum dissolved 1,1-DCE concentration (1,800  $\mu\text{g/L}$ ). The average dissolved 1,1-DCE concentration in the Gage/Hollydale Aquifer this quarter was  $<252$   $\mu\text{g/L}$ .

Cis-1,2 DCE is also a daughter product of the dehydrohalogenation of 1,1,1-TCA and reductive dehalogenation of TCE. Concentrations of dissolved cis-1,2-DCE were identified between 8  $\mu\text{g/L}$  and 15,900  $\mu\text{g/L}$  in the Gasper Aquifer (See Figure 7). The greatest dissolved cis-1,2-DCE concentration was observed in MW-18. The average dissolved cis-1,2-DCE concentration in the Gasper Aquifer this quarter was  $<5,132$   $\mu\text{g/L}$ , a decrease from the second quarter average of  $<7,737$   $\mu\text{g/L}$ . Dissolved cis-1,2-DCE concentrations in the Gage/Hollydale Aquifer ranged between  $<2$   $\mu\text{g/L}$  and up to a maximum of 2,450  $\mu\text{g/L}$  identified from MW-21 (See Figure 8). Gage/Hollydale monitoring well MW-15 contained the second largest dissolved 1,1-DCE concentration

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of 436 µg/L. The average dissolved cis-1,2-DCE concentration in the Gage/Hollydale Aquifer this quarter was <331 µg/L, a decrease from the previous quarterly average of <839 µg/L.

Vinyl chloride (VC) is a by-product from the dehydrohalogenation and reductive dehalogenation of the chlorinated VOC daughter products mentioned above. Similar to the other VOCs, concentrations of dissolved VC were at lower concentrations in the deeper Gage/Hollydale than in the shallow Gasper zone. Dissolved VC concentrations were identified between 36 µg/L and 4,510 µg/L in the shallow Gasper zone (See Figure 7). Monitoring well MW-10 contained the largest dissolved VC concentration in the Gasper. However, dissolved VC concentrations in the Gage/Hollydale ranged from <2 µg/L to 51 µg/L (See Figure 8). The maximum dissolved VC concentration was located along the southwest property line in monitoring well MW-15.

Maximum dissolved concentrations of acetone and MEK were identified in Gasper monitoring well MW-10 as 73,000 µg/L and 58,000 µg/L, respectively (See Figure 9). Groundwater collected from MW-18 also identified elevated concentrations of dissolved acetone as 44,200 µg/L and dissolved MEK as 32,000 µg/L. Note the high dissolved concentrations of acetone and MEK in monitoring well MW-26 located along the southern property line. Average concentrations of dissolved acetone and MEK in the Gasper Aquifer this quarter were 21,262 µg/L and 15,252 µg/L, respectively. No detectable concentrations of acetone or MEK were identified above method detection limit from the 2003 third quarter groundwater monitoring episode in the Gage/Hollydale Aquifers (See Figure 10). However, the detection limits were <25 µg/L in some samples due to dilution factors.

Maximum dissolved methylene chloride concentrations were identified in MW-26 at 14,600 from the shallow Gasper zone and <4 from all the Gage/Hollydale Aquifer monitoring wells sampled (See Figures 9 and 10). No other detectable concentrations of dissolved methylene chloride were identified. The detection limits for dissolved methylene chloride were high in some samples (<400 µg/L) due to the high dilution factors.

Most groundwater samples were also analyzed for biodegradation indicators (See Table 3 for laboratory results). Further comparative data needs to be acquired prior to evaluating biodegradation processes. Subsequent groundwater analysis will include these biodegradation indicators.

## **8.0) CONCLUSIONS**

Based on the recent groundwater sample results, BEII concludes that the site is impacted by dissolved VOCs in both the Gasper and Gage/Hollydale Aquifers. Dissolved VOC concentrations, however, were detected at higher concentrations in the shallow Gasper zone compared to the Gage/Hollydale Aquifer. Gasper monitoring wells

located next to MW-6, MW-8, and MW-19 contained elevated dissolved VOC concentrations. This is expected since these wells contain free product. Gage/Hollydale monitoring wells located along the southern property boundary contained the maximum dissolved VOC concentrations in that aquifer.

BEI also concludes that the recent groundwater sampling data provides preliminary support that the site has potential for intrinsic biodegradation. Dissolved parent VOC (PCE and TCE) concentrations were identified at concentrations  $\leq 2,930$   $\mu\text{g/L}$ . 1,1,1-TCA was the only parent VOC that was identified at greater than 4,500  $\mu\text{g/L}$ . Daughter VOC constituents such as 1,1-DCA, 1,1-DCE, cis-1,2-DCE, and VC identified dissolved concentrations of up to 47,400  $\mu\text{g/L}$ . The low parent VOC concentration to high daughter VOC concentration ratio is a preliminary indicator of intrinsic biodegradation. However, further groundwater monitoring is needed to determine whether intrinsic biodegradation is occurring.

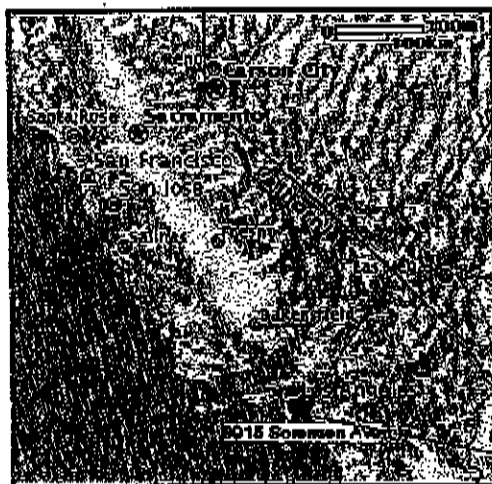
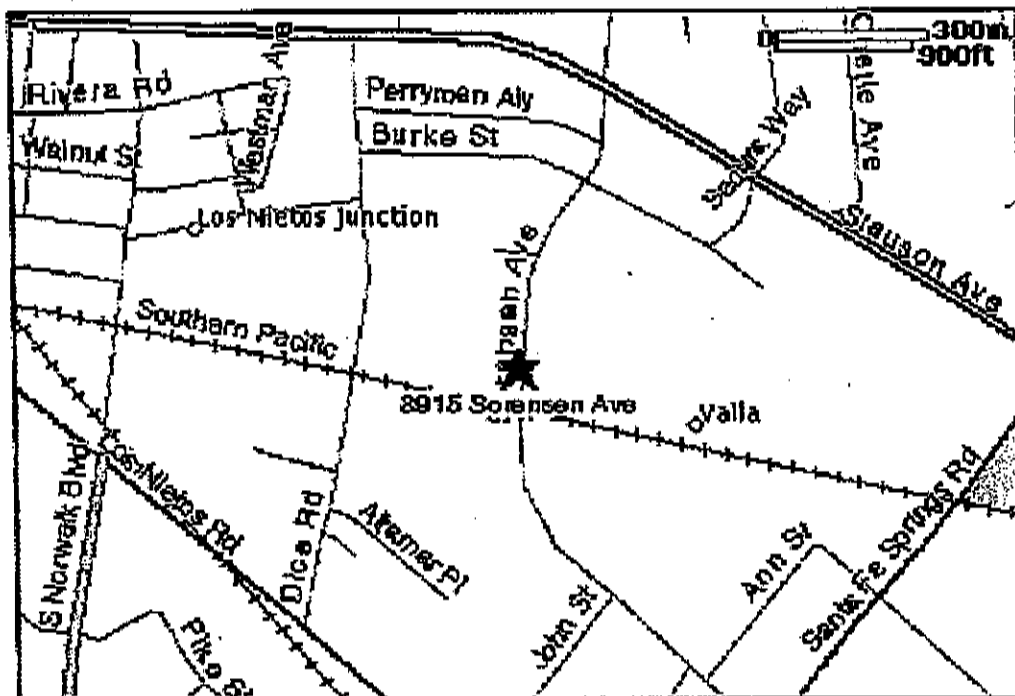
## **9.0) RECOMMENDATIONS**

BEI recommends that quarterly groundwater monitoring for VOCs and TPH-gas be continued at the former ACC property. BEI further recommends that free product removal be performed on a monthly basis to reduce its mass.

FIGURES

ANCHEM0325





Blakely Environmental  
Investigations, Inc.  
4359 Phelan Road  
Phelan, CA 92371

### Site Location Map

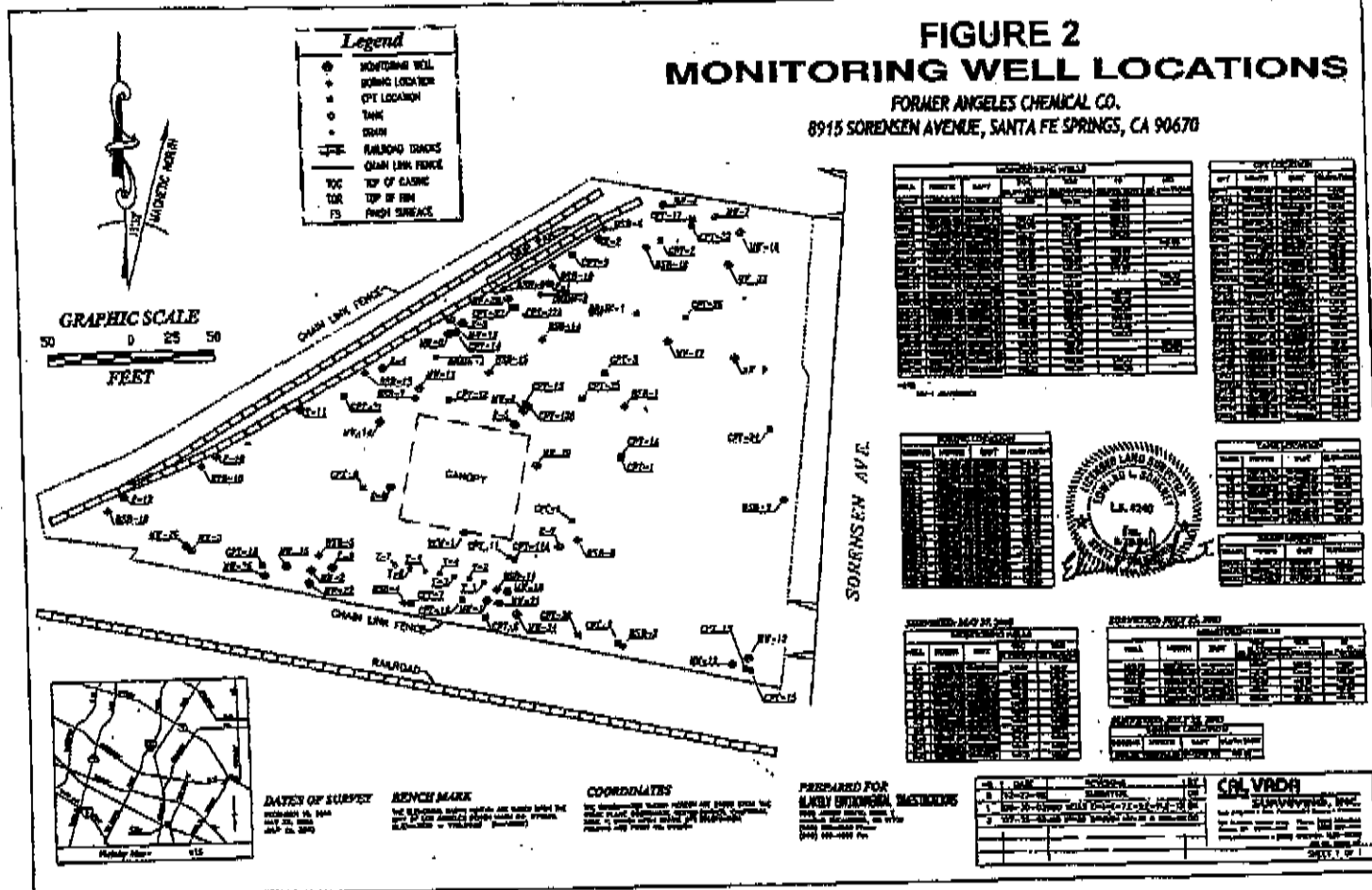
Former Angeles Chemical Company  
8915 Sorensen Ave., Santa Fe Springs, CA 90670

FIGURE

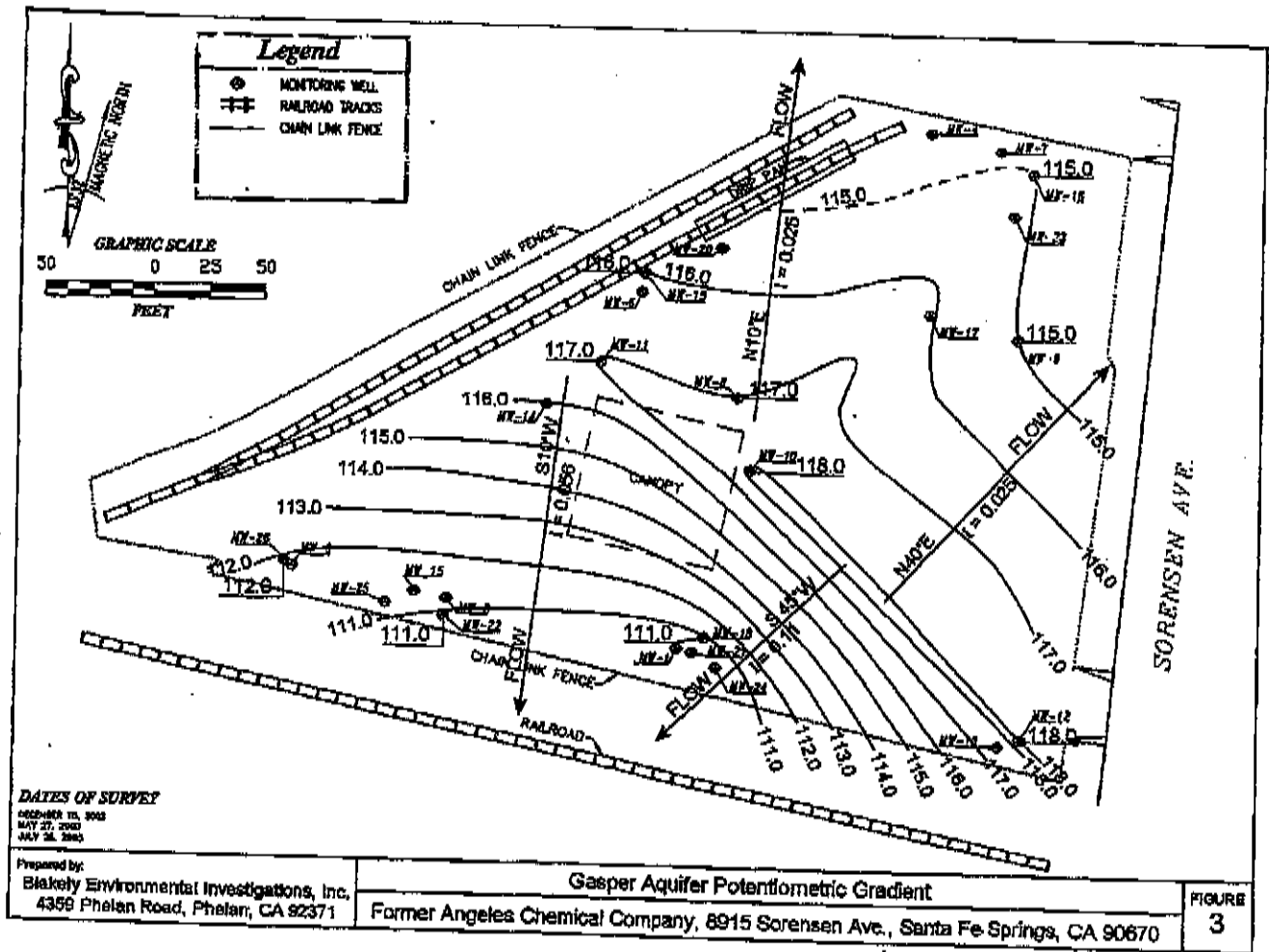
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ANCHEM0326

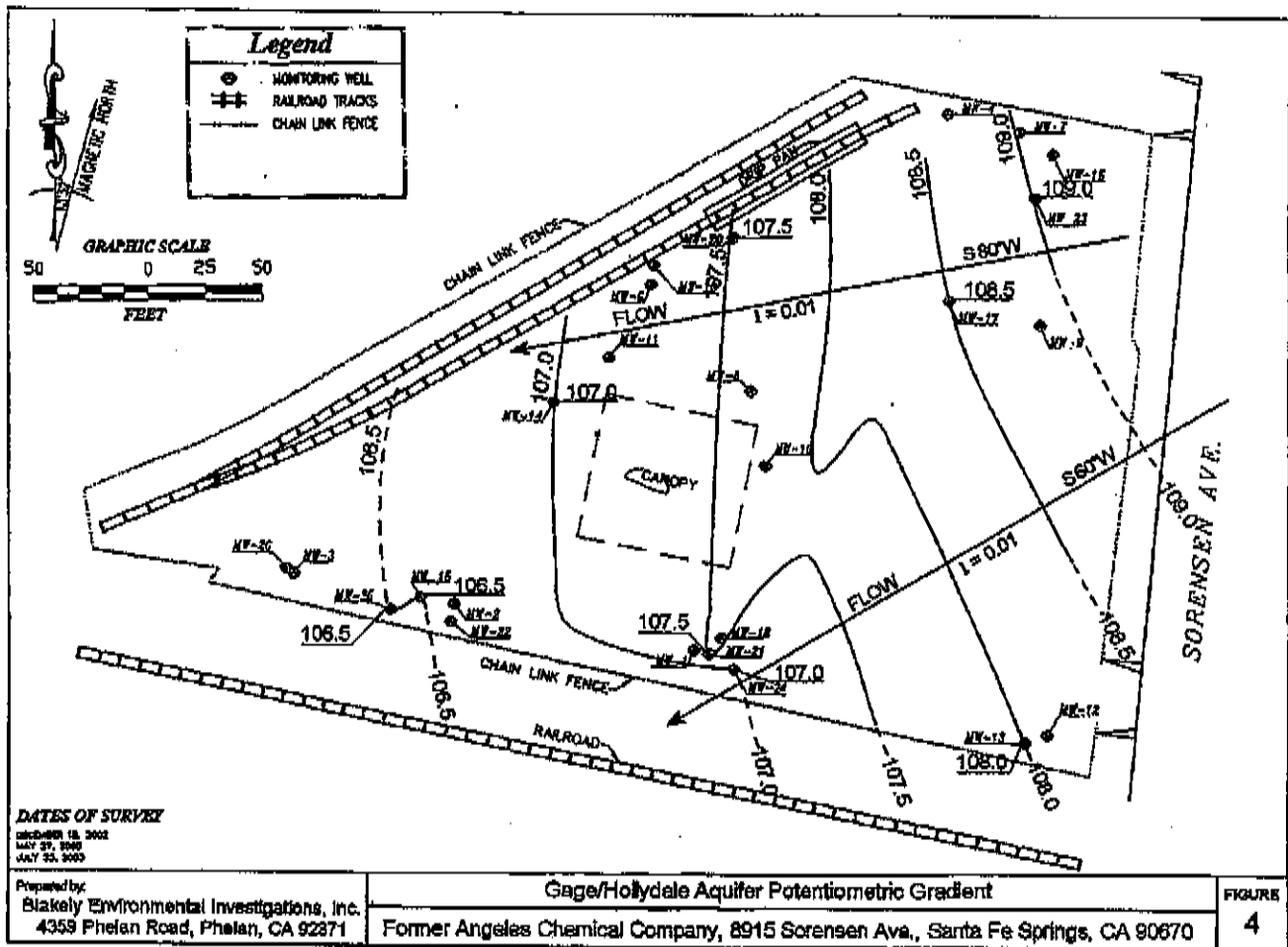
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ANCHEM0327



ANCHEM0328

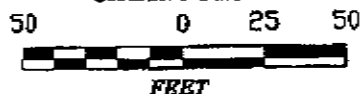


# Legend

- MONITORING WELL
- RAILROAD TRACKS
- CHAIN LINK FENCE

June 2003  
September 2003

GRAPHIC SCALE



MW-28			
TPH-gas	28400	69200	
Benzene	125	270	
Ethylbenzene	1620	2900	
Toluene	<50	10500	
Xylene	1050	6870	

MW-11			
TPH-gas	NA	30200	
Benzene	520	775	
Ethylbenzene	940	1010	
Toluene	4820	4030	
Xylene	1560	1320	

MW-10			
TPH-gas	NA	69800	
Benzene	250	340	
Ethylbenzene	1400	1360	
Toluene	10900	13800	
Xylene	4590	4480	

MW-18			
TPH-gas	NA	44900	
Benzene	392	<1	
Ethylbenzene	1010	740	
Toluene	5510	3700	
Xylene	3850	2620	

MW-12			
TPH-gas	NA	1300	
Benzene	<5	5.5	
Ethylbenzene	11.1	52.5	
Toluene	<5	<2.5	
Xylene	<5	9	

MW-9			
TPH-gas	NA	1280	
Benzene	64.4	75	
Ethylbenzene	<10	<10	
Toluene	<10	<10	
Xylene	<10	<10	

MW-16			
TPH-gas	NA	1,480	
Benzene	97.5	72	
Ethylbenzene	<25	<25	
Toluene	<25	<25	
Xylene	<25	<25	

## DATES OF SURVEY

DECEMBER 18, 2002  
MAY 27, 2003  
JULY 25, 2003

Prepared by:

Blakely Environmental Investigations, Inc.  
4359 Phelan Road, Phelan, CA 92371

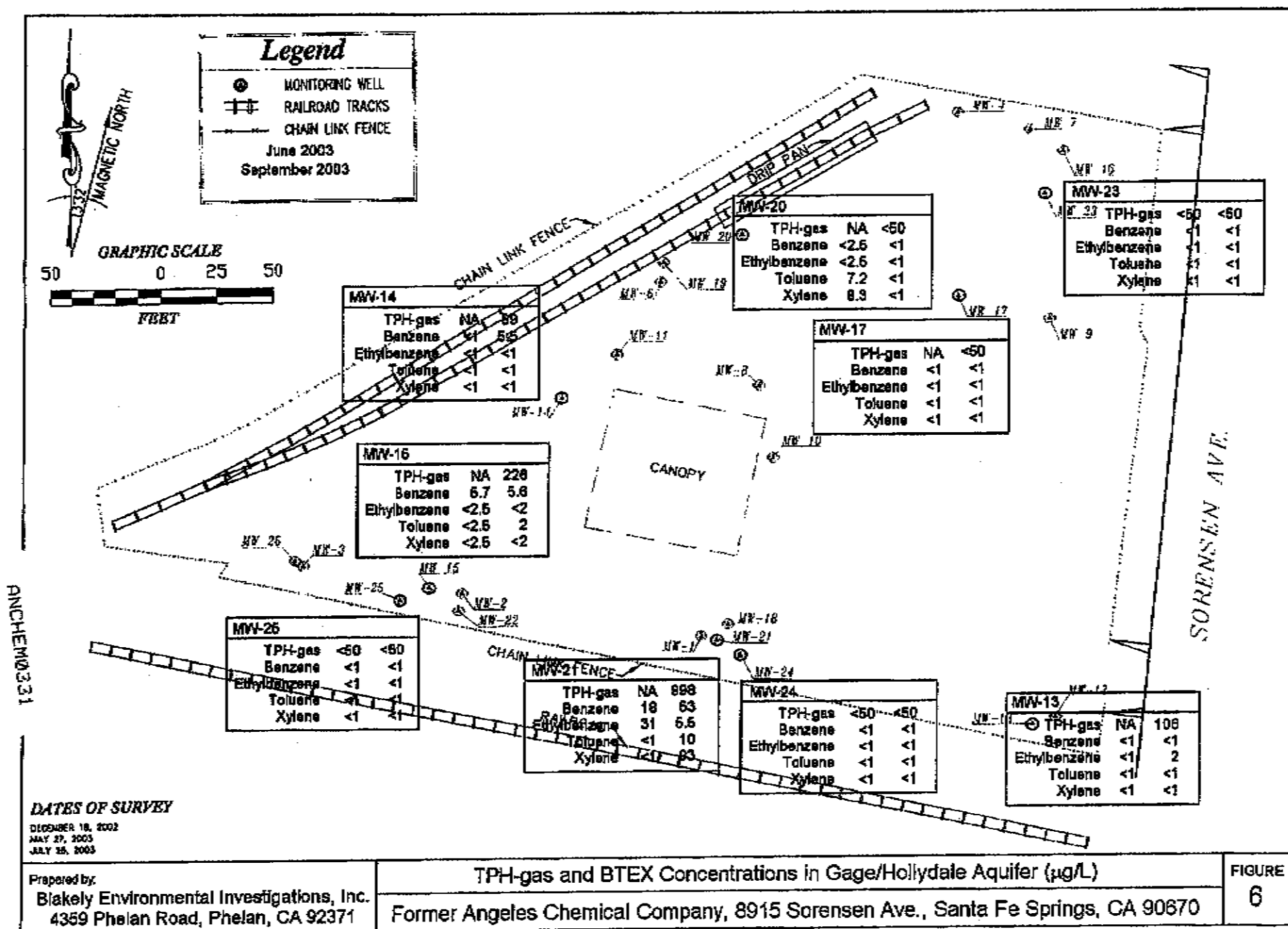
TPH-gas and BTEX Concentrations in Gasper Aquifer (µg/L)

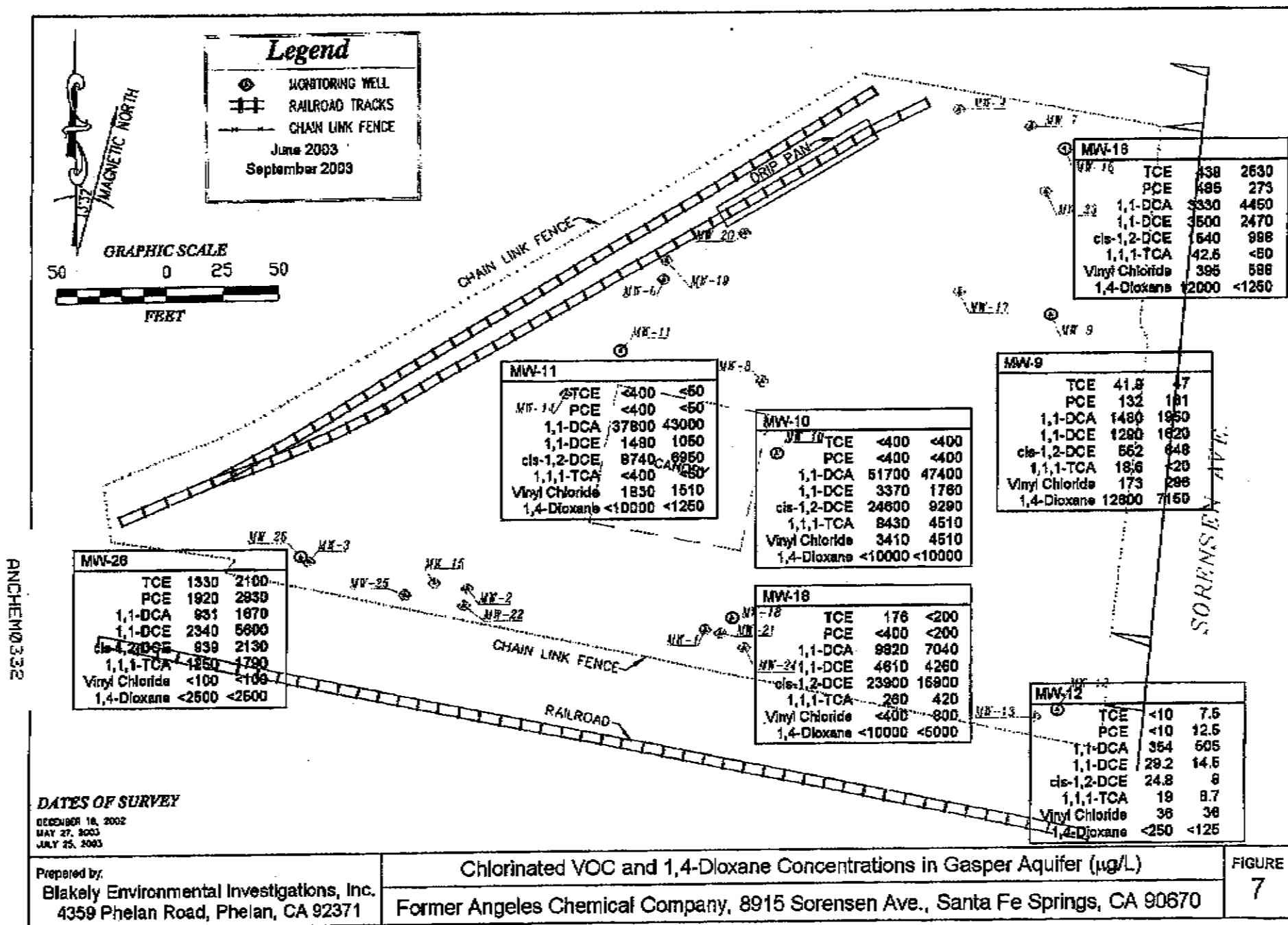
Former Angeles Chemical Company, 8915 Sorensen Ave., Santa Fe Springs, CA 90670

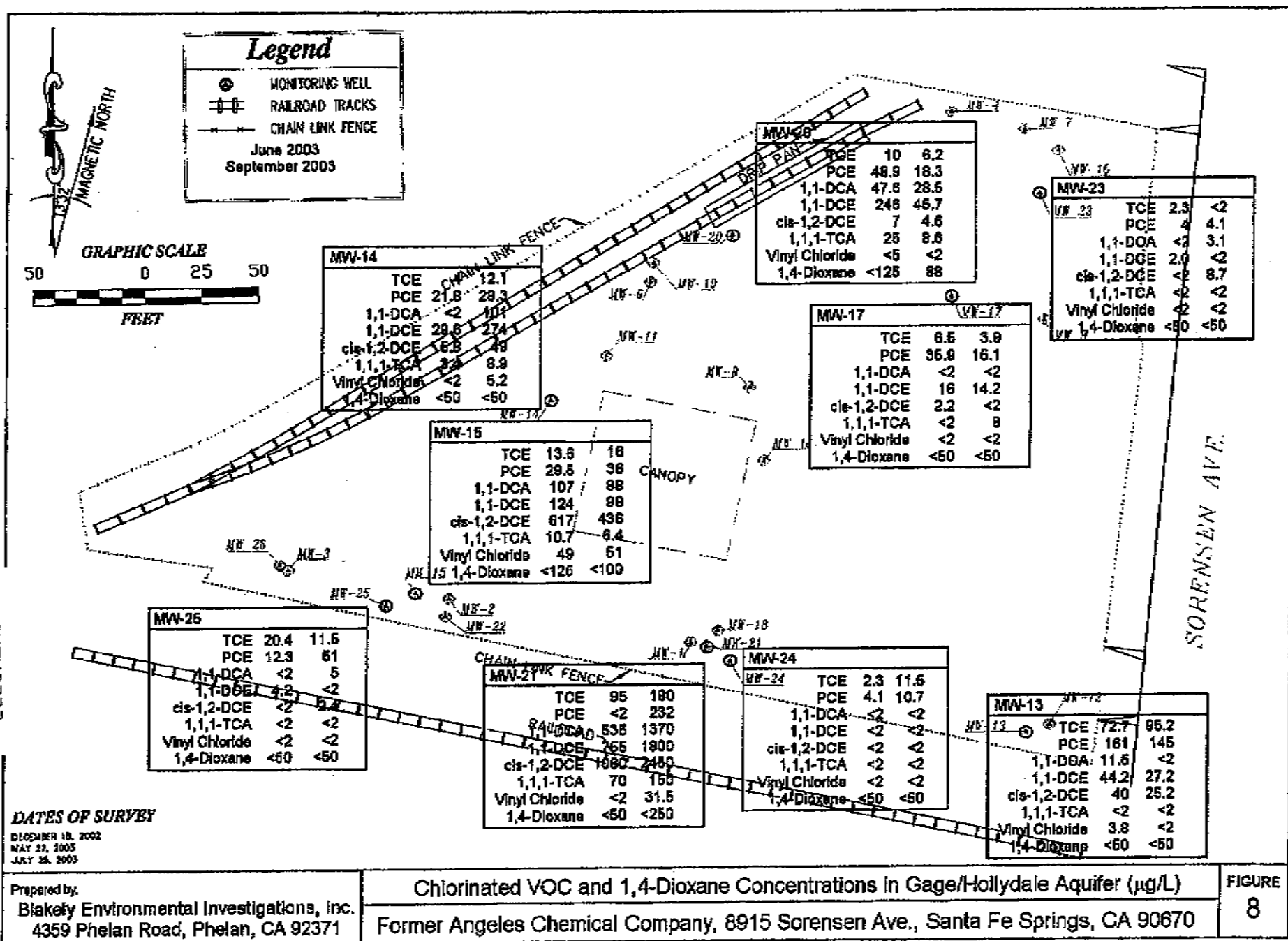
FIGURE

5

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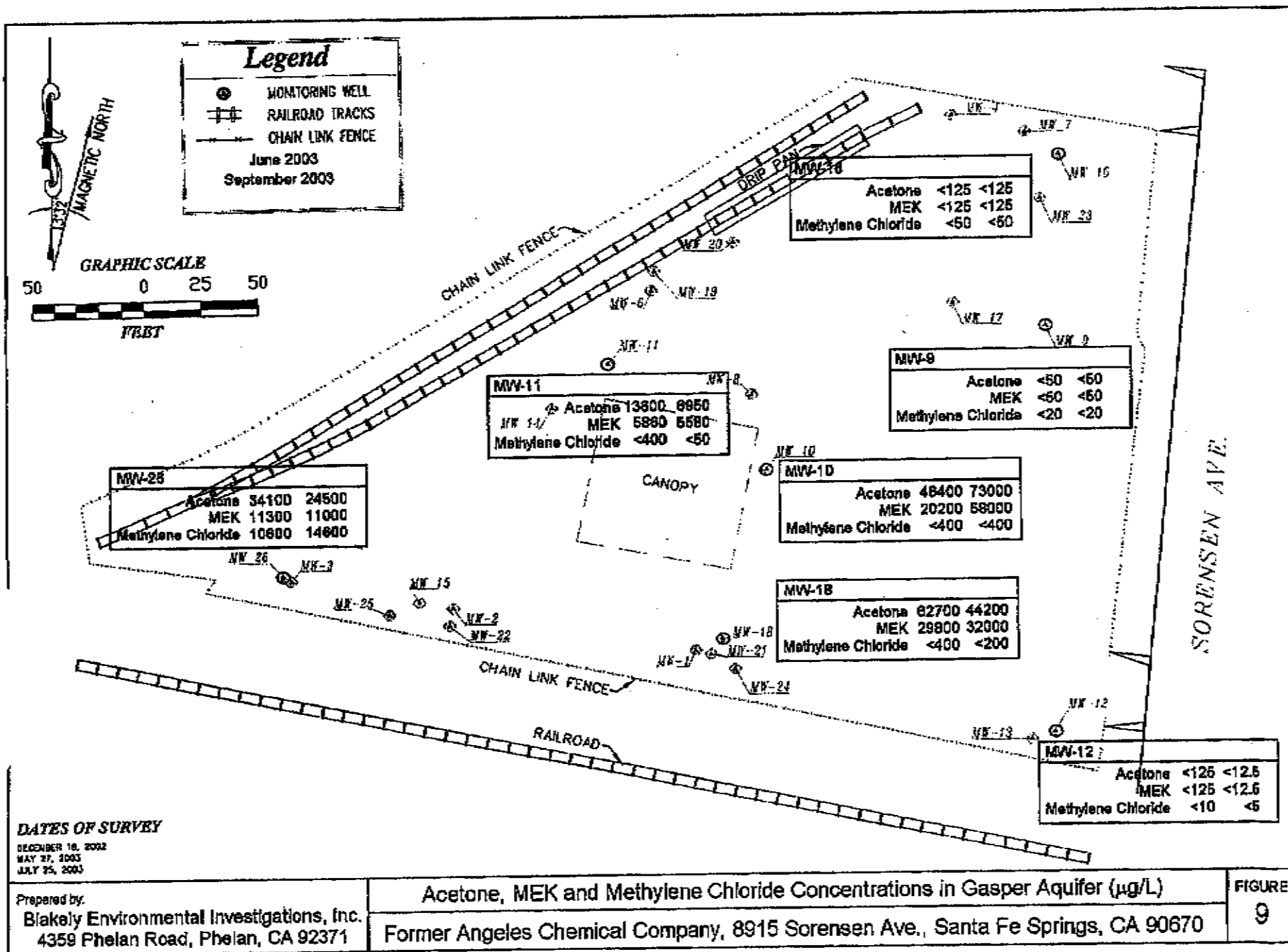


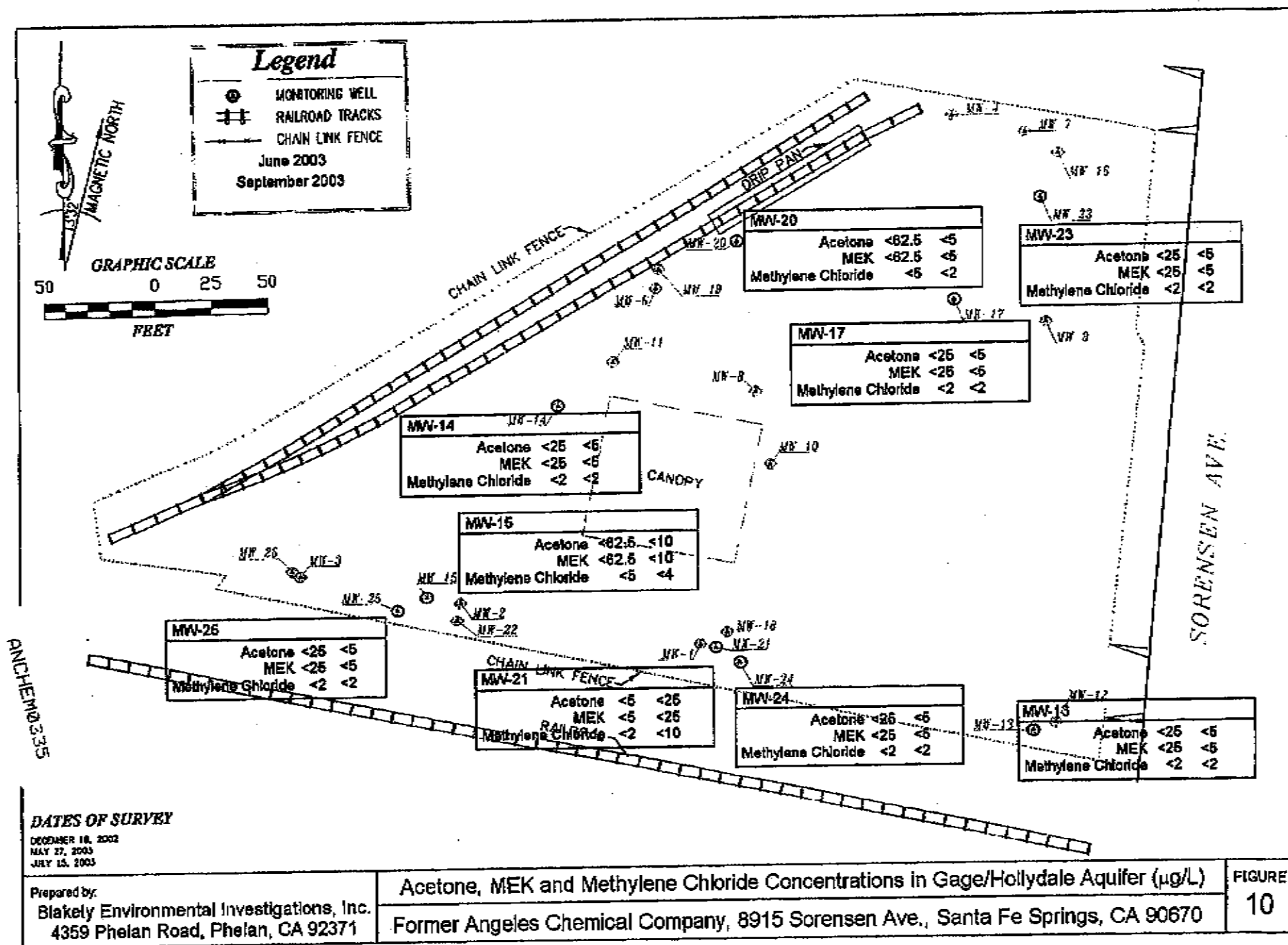






ANCH0334





Tables

ANCHEM0336

Table 1: Conductivity, pH, and TPH-gas Groundwater Sample Results using EPA Method 8015 (µg/L)																										
Screened Interval	Date	TPH-1	TPH-2	TPH-3	TPH-4	TPH-5	TPH-6	TPH-7	TPH-8	TPH-9	TPH-10	TPH-11	TPH-12	TPH-13	TPH-14	TPH-15	TPH-16	TPH-17	TPH-18	TPH-19	TPH-20	TPH-21	TPH-22	TPH-23	TPH-24	TPH-25
DTW	Feb-04	30.00	28.00	29.70	23.30	24.80	24.50	26.5-40.5	20.5-45.5	22.40	30.40	30.40	52.00	55.40	34.00	29.40	35.40	21.40	30.40	37.40	33.40	30.40	71.40	67.70	71.40	30.40
	Nov-00	31.60	35.20	35.40	28.30	28.30	28.30																			
	Oct-01	37.41	37.81	38.19	28.30	NA	29.70																			
	Nov-01	NA	NA	NA	28.30	28.30	NA																			
	Feb-02	28.3	28.30	27.30	28.44	30.50	28.21																			
	Jan-02	37.22	28.78	28.19	28.48	NA	30.30	30.30	30.30																	
	Oct-02	42.48	43.80	44.80	28.28	35.30	24.11	22.80	34.70																	
	Dec-02	NA	43.18	44.32	28.28	RP only	24.00	25.80	34.60	32.80	32.71	33.30	41.60	45.00	43.00	33.00	40.40	33.00	33.30	41.11	42.34					
	Mar-03	NA	41.07	47.20	28.30	RP only	20.10	27.61	33.30	32.40	33.00	33.00	38.77	40.90	41.30	32.01	38.20	38.30	32.40	38.30	40.30					
	Jun-03	NA	38.00	38.80	28.30	RP only	20.40	30.00	31.10	30.41	30.10	31.00	37.80	38.30	38.00	38.00	38.41	38.10	38.30	37.50	38.50	35.00	34.20	37.30	38.20	36.7
	Sep-03	NA	NA	NA	20.47	RP only	NA	32.34	34.30	31.00	31.00	33.30	42.10	43.70	44.10	35.40	40.00	38.37	33.30	41.87	42.00	38.67	35.30	43.00	44.30	33.30
Conductivity	Dec-02	NA	2071	2085	NA	NA	2710	NA	2381	2371	2094	1072	1374	1600	1821	2100	1883	2513	2077	1907	1746					
	Mar-03	NA	2094	1974	NA	NA	2706	NA	2325	4382	3780	1482	1802	1913	1910	2017	1882	2643	2012	1623	1885					
	Jun-03	NA	1780	1981	NA	NA	2802	NA	2406	4408	3248	1182	1832	1871	1851	1851	1813	2002	2097	1780	1780	2500	1200	1500	1500	3000
	Sep-03	NA	NA	NA	NA	NA	NA	NA	2540	2878	3550	1010	1904	2100	1943	2210	2230	3025	NA	1980	1910	NS-NW	2200	1720	1893	NS-NW
pH	Dec-02	NA	6.90	6.82	NA	NA	6.70	NA	6.58	6.42	6.37	7.02	6.97	6.83	6.83	6.58	6.80	6.68	7.02	6.98	6.96					
	Mar-03	NA	6.8	6.8	NA	NA	6.7	NA	7.0	6.7	6.8	7.1	7.5	7.3	7.3	6.8	7.3	6.8	6.8	7.3	7.3					
	Jun-03	NA	6.9	6.7	NA	NA	6.8	NA	6.7	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.7	6.6	6.6	NA	NA	NA	NA	NA
	Sep-03	NA	NA	NA	NA	NA	NA	NA	6.55	6.52	6.40	6.20	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	NS-NW	6.64	6.74	6.67	NS-NW
TPH-gas	Feb-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nov-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nov-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Feb-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jan-02	124,000	14,000	22,000	NS-PP	NS-PP	2,600	NS-PP	22,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-02	82,300	7,370	28,000	NS-PP	NS-PP	3,300	NS-PP	1,730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dec-02	NA	8,330	11,400	NS-PP	NS-PP	6,350	NS-PP	1,830	88,300	22,800	8,300	88	7,130	300	3,250	77	41,700	107,000	01	600					
	Mar-03	NA	15,000	12,000	NS-PP	NS-PP	2,470	NS-PP	2,600	85,100	24,700	1,730	450	1,450	270	6,380	450	153,000	177,000	32	740					
	Jun-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,830	<50	<50	<50	28,400
	Sep-03	NA	NA	NA	NA	NA	NA	NA	1,200	88,000	30,200	1,300	100	80	220	1,480	<50	44,800	NA	<50	900	NS-NW	<50	<50	<50	68,200
DTW Depth to Water:																										
NA= Not Analyzed																										
NS-PP= Not Sampled Free Product present																										
NS-NW= Not Sampled Not Enough Water present																										
Abandoned Well																										
Analysis not reproduced																										

Table 2: Discharged VOCs from Departmental Storage Facility, page 2 of 2 (continued)		Date		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13		MW-14		MW-15		MW-16		MW-17		MW-18		MW-19		MW-20		MW-21		MW-22		MW-23		MW-24		MW-25		MW-26		MW-27		MW-28		MW-29		MW-30		MW-31		MW-32		MW-33		MW-34		MW-35		MW-36		MW-37		MW-38		MW-39		MW-40		MW-41		MW-42		MW-43		MW-44		MW-45		MW-46		MW-47		MW-48		MW-49		MW-50		MW-51		MW-52		MW-53		MW-54		MW-55		MW-56		MW-57		MW-58		MW-59		MW-60		MW-61		MW-62		MW-63		MW-64		MW-65		MW-66		MW-67		MW-68		MW-69		MW-70		MW-71		MW-72		MW-73		MW-74		MW-75		MW-76		MW-77		MW-78		MW-79		MW-80		MW-81		MW-82		MW-83		MW-84		MW-85		MW-86		MW-87		MW-88		MW-89		MW-90		MW-91		MW-92		MW-93		MW-94		MW-95		MW-96		MW-97		MW-98		MW-99		MW-100		MW-101		MW-102		MW-103		MW-104		MW-105		MW-106		MW-107		MW-108		MW-109		MW-110		MW-111		MW-112		MW-113		MW-114		MW-115		MW-116		MW-117		MW-118		MW-119		MW-120		MW-121		MW-122		MW-123		MW-124		MW-125		MW-126		MW-127		MW-128		MW-129		MW-130		MW-131		MW-132		MW-133		MW-134		MW-135		MW-136		MW-137		MW-138		MW-139		MW-140		MW-141		MW-142		MW-143		MW-144		MW-145		MW-146		MW-147		MW-148		MW-149		MW-150		MW-151		MW-152		MW-153		MW-154		MW-155		MW-156		MW-157		MW-158		MW-159		MW-160		MW-161		MW-162		MW-163		MW-164		MW-165		MW-166		MW-167		MW-168		MW-169		MW-170		MW-171		MW-172		MW-173		MW-174		MW-175		MW-176		MW-177		MW-178		MW-179		MW-180		MW-181		MW-182		MW-183		MW-184		MW-185		MW-186		MW-187		MW-188		MW-189		MW-190		MW-191		MW-192		MW-193		MW-194		MW-195		MW-196		MW-197		MW-198		MW-199		MW-200		MW-201		MW-202		MW-203		MW-204		MW-205		MW-206		MW-207		MW-208		MW-209		MW-210		MW-211		MW-212		MW-213		MW-214		MW-215		MW-216		MW-217		MW-218		MW-219		MW-220		MW-221		MW-222		MW-223		MW-224		MW-225		MW-226		MW-227		MW-228		MW-229		MW-230		MW-231		MW-232		MW-233		MW-234		MW-235		MW-236		MW-237		MW-238		MW-239		MW-240		MW-241		MW-242		MW-243		MW-244		MW-245		MW-246		MW-247		MW-248		MW-249		MW-250		MW-251		MW-252		MW-253		MW-254		MW-255		MW-256		MW-257		MW-258		MW-259		MW-260		MW-261		MW-262		MW-263		MW-264		MW-265		MW-266		MW-267		MW-268		MW-269		MW-270		MW-271		MW-272		MW-273		MW-274		MW-275		MW-276		MW-277		MW-278		MW-279		MW-280		MW-281		MW-282		MW-283		MW-284		MW-285		MW-286		MW-287		MW-288		MW-289		MW-290		MW-291		MW-292		MW-293		MW-294		MW-295		MW-296		MW-297		MW-298		MW-299		MW-300		MW-301		MW-302		MW-303		MW-304		MW-305		MW-306		MW-307		MW-308		MW-309		MW-310		MW-311		MW-312		MW-313		MW-314		MW-315		MW-316		MW-317		MW-318		MW-319		MW-320		MW-321		MW-322		MW-323		MW-324		MW-325		MW-326		MW-327		MW-328		MW-329		MW-330		MW-331		MW-332		MW-333		MW-334		MW-335		MW-336		MW-337		MW-338		MW-339		MW-340		MW-341		MW-342		MW-343		MW-344		MW-345		MW-346		MW-347		MW-348		MW-349		MW-350		MW-351		MW-352		MW-353		MW-354		MW-355		MW-356		MW-357		MW-358		MW-359		MW-360		MW-361		MW-362		MW-363		MW-364		MW-365		MW-366		MW-367		MW-368		MW-369		MW-370		MW-371		MW-372		MW-373		MW-374		MW-375		MW-376		MW-377		MW-378		MW-379		MW-380		MW-381		MW-382		MW-383		MW-384		MW-385		MW-386		MW-387		MW-388		MW-389		MW-390		MW-391		MW-392		MW-393		MW-394		MW-395		MW-396		MW-397		MW-398		MW-399		MW-400		MW-401		MW-402		MW-403		MW-404		MW-405		MW-406		MW-407		MW-408		MW-409		MW-410		MW-411		MW-412		MW-413		MW-414		MW-415		MW-416		MW-417		MW-418		MW-419		MW-420		MW-421		MW-422		MW-423		MW-424		MW-425		MW-426		MW-427		MW-428		MW-429		MW-430		MW-431		MW-432		MW-433		MW-434		MW-435		MW-436		MW-437		MW-438		MW-439		MW-440		MW-441		MW-442		MW-443		MW-444		MW-445		MW-446		MW-447		MW-448		MW-449		MW-450		MW-451		MW-452		MW-453		MW-454		MW-455		MW-456		MW-457		MW-458		MW-459		MW-460		MW-461		MW-462		MW-463		MW-464		MW-465		MW-466		MW-467		MW-468		MW-469		MW-470		MW-471		MW-472		MW-473		MW-474		MW-475		MW-476		MW-477		MW-478		MW-479		MW-480		MW-481		MW-482		MW-483		MW-484		MW-485		MW-486		MW-487		MW-488		MW-489		MW-490		MW-491		MW-492		MW-493		MW-494		MW-495		MW-496		MW-497		MW-498		MW-499		MW-500		MW-501		MW-502		MW-503		MW-504		MW-505		MW-506		MW-507		MW-508		MW-509		MW-510		MW-511		MW-512		MW-513		MW-514		MW-515		MW-516		MW-517		MW-518		MW-519		MW-520		MW-521		MW-522		MW-523		MW-524		MW-525		MW-526		MW-527		MW-528		MW-529		MW-530		MW-531		MW-532		MW-533		MW-534		MW-535		MW-536		MW-537		MW-538		MW-539		MW-540		MW-541		MW-542		MW-543		MW-544		MW-545		MW-546		MW-547		MW-548		MW-549		MW-550		MW-551		MW-552		MW-553		MW-554		MW-555		MW-556		MW-557		MW-558		MW-559		MW-560		MW-561		MW-562		MW-563		MW-564		MW-565		MW-566		MW-567		MW-568		MW-569		MW-570		MW-571		MW-572		MW-573		MW-574		MW-575		MW-576		MW-577		MW-578		MW-579		MW-580		MW-581		MW-582		MW-583		MW-584		MW-585		MW-586		MW-587		MW-588		MW-589		MW-590		MW-591		MW-592		MW-593		MW-594		MW-595		MW-596		MW-597		MW-598		MW-599		MW-600		MW-601		MW-602		MW-603		MW-604		MW-605		MW-606		MW-607		MW-608		MW-609		MW-610		MW-611		MW-612		MW-613		MW-614		MW-615		MW-616		MW-617		MW-618		MW-619		MW-620		MW-621		MW-622		MW-623		MW-624		MW-625		MW-626		MW-627		MW-628		MW-629		MW-630		MW-631		MW-632		MW-633		MW-634		MW-635		MW-636		MW-637		MW-638		MW-639		MW-640		MW-641		MW-642		MW-643		MW-644		MW-645		MW-646		MW-647		MW-648		MW-649		MW-650		MW-651		MW-652		MW-653		MW-654		MW-655		MW-656		MW-657		MW-658		MW-659		MW-660		MW-661		MW-662		MW-663		MW-664		MW-665		MW-666		MW-667		MW-668		MW-669		MW-670		MW-671		MW-672		MW-673		MW-674		MW-675		MW-676		MW-677		MW-678		MW-679		MW-680		MW-681		MW-682		MW-683		MW-684		MW-685		MW-686		MW-687		MW-688		MW-689		MW-690		MW-691		MW-692		MW-693		MW-694		MW-695		MW-696		MW-697		MW-698		MW-699		MW-700		MW-701		MW-702		MW-703		MW-704		MW-705		MW-706		MW-707		MW-708		MW-709		MW-710		MW-711		MW-712		MW-713		MW-714		MW-715		MW-716		MW-717		MW-718		MW-719		MW-720		MW-721		MW-722		MW-723		MW-724		MW-725		MW-726		MW-727		MW-728		MW-729		MW-730		MW-731		MW-732		MW-733		MW-734		MW-735		MW-736		MW-737		MW-738		MW-739		MW-740		MW-741		MW-742		MW-743		MW-744		MW-745		MW-746		MW-747		MW-748		MW-749		MW-750		MW-751		MW-752		MW-753		MW-754		MW-755		MW-756		MW-757		MW-758		MW-759		MW-760		MW-761		MW-762		MW-763		MW-764		MW-765		MW-766		MW-767		MW-768		MW-769		MW-770		MW-771		MW-772		MW-773		MW-774		MW-775		MW-776		MW-777		MW-778		MW-779		MW-780		MW-781		MW-782		MW-783		MW-784		MW-785		MW-786		MW-787		MW-788		MW-789		MW-790		MW-791		MW-792		MW-793		MW-794		MW-795		MW-796		MW-797		MW-798		MW-799		MW-800		MW-801		MW-802		MW-803		MW-804		MW-805		MW-806		MW-807		MW-808		MW-809		MW-810		MW-811		MW-812		MW-813		MW-814		MW-815		MW-816		MW-817		MW-818		MW-819		MW-820		MW-821		MW-822		MW-823		MW-824		MW-825		MW-826		MW-827		MW-828		MW-829		MW-830		MW-831		MW-832		MW-833		MW-834		MW-835		MW-836		MW-837		MW-838		MW-839		MW-840		MW-841		MW-842		MW-843		MW-844		MW-845		MW-846		MW-847		MW-848		MW-849		MW-850		MW-851		MW-852		MW-853		MW-854		MW-855		MW-856		MW-857		MW-858		MW-859		MW-860		MW-861		MW-862		MW-863		MW-864		MW-865		MW-866		MW-867		MW-868		MW-869		MW-870		MW-871		MW-872		MW-873		MW-874		MW-875		MW-876		MW-877		MW-878		MW-879		MW-880		MW-881		MW-882		MW-883		MW-884		MW-885		MW-886		MW-887		MW-888		MW-889		MW-890		MW-891		MW-892		MW-893		MW-894		MW-895		MW-896		MW-897		MW-898		MW-899		MW-900		MW-901		MW-902		MW-903		MW-904		MW-905		MW-906		MW-907		MW-908		MW-909		MW-910		MW-911		MW-912		MW-913		MW-914		MW-915		MW-916		MW-917		MW-918		MW-919		MW-920		MW-921		MW-922		MW-923		MW-924		MW-925		MW-926		MW-927		MW-928		MW-929		MW-930		MW-931		MW-932		MW-933		MW-934		MW-935		MW-936		MW-937		MW-938		MW-939		MW-940		MW-941		MW-942		MW-943		MW-944		MW-945		MW-946		MW-947		MW-948		MW-949		MW-950		MW-951		MW-952		MW-953		MW-954		MW-955		MW-956		MW-957		MW-9	
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Table 2 (cont.) Deleted VON Willebrand factor levels from the study EPA method used (n=10)

[illegible]

Table 2 (cont.): Detected VOCs from Groundwater Sample Results using EPA Method 8260 (pg. 1)

VOCs	Date	MSL-1	MSL-2	MSL-3	MSL-4	MSL-5	MSL-6	MSL-7	MSL-8	MSL-9	MSL-10	MSL-11	MSL-12	MSL-13	MSL-14	MSL-15	MSL-16	MSL-17	MSL-18	MSL-19	MSL-20	MSL-21	MSL-22	MSL-23	MSL-24	MSL-25	MSL-26
Chloroethene	MSL-01	993	2,150	3,370	3,320	3,120	3,120	134																			
	MSL-02	<100	<100	100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-03	<100	<100	100	NS-PP	NS-PP	NS-PP	100																			
	MSL-04	20	1.1	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-05	20.8	<100	100	NS-PP	NS-PP	NS-PP	NS-PP	100																		
	MSL-06	<100	<100	NS-PP	NS-PP	NS-PP	NS-PP	<100	NS-PP	100																	
	MSL-07	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-08	NA	<100	200	NS-PP	NS-PP	NS-PP	<100	NS-PP	130																	
	MSL-09	NA	<100	200	NS-PP	NS-PP	NS-PP	<100	NS-PP	130																	
	MSL-10	NA	200	200	NS-PP	NS-PP	NS-PP	<100	NS-PP	130																	
	MSL-11	NA	NA	NA	NS-PP	NS-PP	NS-PP	NA	NS-PP	700																	
1,1,1-Trichloroethene	MSL-01	5,350	3,470	440	NS-PP	114,000	NS-PP	NS-PP																			
	MSL-02	<100	<100	70	NS-PP	NS-PP	NS-PP	<100																			
	MSL-03	<100	<100	<100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-04	<100	<100	<100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-05	<100	<100	<100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-06	<100	<100	<100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-07	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-08	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-09	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-10	NA	200	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-11	NA	NA	NA	NS-PP	NS-PP	NS-PP	NA	NS-PP	<100																	
Trichloroethene	MSL-01	7,100	3,040	1,200	NS-PP	1,300	NS-PP	NS-PP																			
	MSL-02	<100	<100	100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-03	<100	<100	100	NS-PP	NS-PP	NS-PP	<100																			
	MSL-04	20	1.1	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-05	<100	<100	100	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-06	<100	<100	100	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-07	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-08	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-09	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-10	NA	200	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-11	NA	NA	NA	NS-PP	NS-PP	NS-PP	NA	NS-PP	<100																	
1,2-Dichloroethene	MSL-01	1,000	100	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-02	2,000	200	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-03	2,000	200	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-04	2,000	200	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-05	2,000	200	200	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-06	NA	200	200	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-07	NA	200	200	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-08	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-09	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-10	NA	NA	NA	NS-PP	NS-PP	NS-PP	NA	NS-PP	<100																	
1,2,3-Trichloroethene	MSL-01	60	60	60	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-02	60	60	60	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-03	60	60	60	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-04	60	60	60	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-05	60	60	60	NS-PP	NS-PP	NS-PP	NS-PP																			
	MSL-06	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-07	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-08	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-09	NA	<100	<100	NS-PP	NS-PP	NS-PP	<100	NS-PP	200																	
	MSL-10	NA	NA	NA	NS-PP	NS-PP	NS-PP	NA	NS-PP	<100																	



**Table 2** (continued) Estimated VCEs from Groundwater Sampling Results using EPA Method 8160-G

VOCs		VOCs from Groundwater Sample Results using EPA Method 8260 (ug/L)																						
	Date	MW-2	MW-3	MW-5	MW-4	MW-7	MW-6	MW-8	MW-12	MW-11	MW-13	MW-14	MW-18	MW-19	MW-17	MW-16	MW-15	MW-20	MW-21	MW-22	MW-23	MW-24	MW-25	MW-26
Toluene	Feb-00	ND	7.83	0.3	0.700	10.380	360																	
	Mar-00	4.000	5	3.330	ND-PP	ND-PP	600																	
	Apr-00	2.278	38	8.180	ND-PP	ND-PP	915																	
	Feb-01	4.400	26.2	4.030	ND-PP	ND-PP	1,300																	
	Mar-01	5.180	182	2.700	ND-PP	ND-PP	1,300	ND-PP																
	Oct-01	1.340	31	1.810	ND-PP	ND-PP	2,300																	
	Oct-02	NA	NA	NA	ND-PP	ND-PP	ND-PP	ND-PP																
	Mar-03	NA	3000	8.000	ND-PP	ND-PP	ND-PP	ND-PP	18,800	1,200	20.0	1.0	2,000	14.4	460			1,700	11,800	5.3	8.7			
	Mar-03	NA	1100	2.800	ND-PP	ND-PP	ND-PP	ND-PP	12,000	3,800	16.0	1.0	200	410	40			4,800	11,600	7.2	4	40		
	Mar-03	NA	NA	NA	ND-PP	ND-PP	ND-PP	ND-PP	11,000	4,000	4	0.1	40	400	40			8,000	10,300	7.2	4	40		
	Mar-03	NA	NA	NA	ND-PP	ND-PP	ND-PP	ND-PP	12,800	4,000	4	0.1	40	40	40			3,700	10,400	4.1	10	ND-PP	4.1	4.1
Xylenes	Oct-01	1,000	71	45	ND-PP	1,000	188																	
	Feb-02	1,000	19	50	ND-PP	ND-PP	917																	
	Mar-02	1,000	100	50	ND-PP	ND-PP	ND-PP																	
	Apr-02	2,000	2,110	12,000	ND-PP	ND-PP	410	ND-PP																
	Dec-02	NA	21,200	12,700	ND-PP	ND-PP	24	ND-PP																
	Mar-03	1,000	7,000	7,000	ND-PP	ND-PP	200	ND-PP	4,100	100	1,000							1,000	4,000					
	Mar-03	NA	2,800	2,800	ND-PP	ND-PP	300	ND-PP	3,000	1,000	ND-PP							1,000	2,000					
	Mar-03	NA	4,000	4,000	ND-PP	ND-PP	300	ND-PP	3,710	1,000	ND-PP							1,000	2,000					
	Mar-03	NA	NA	NA	ND-PP	ND-PP	ND-PP	ND-PP	4,010	1,010	ND-PP							1,000	2,000					
	Mar-03	NA	NA	NA	ND-PP	ND-PP	ND-PP	ND-PP	4,010	1,010	ND-PP							1,000	2,000					
NA= Not Analyzed																								
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TABLE 1. Results for EPA Methods 276.1, 325.1, 310.1, 322.1, 375.4, 7290, 7490, 145.1, Colorimetry and Standard Method 4500 (mg/L)																							
Compound	Date	MTW-2	MTW-3	MTW-7	MTW-8	MTW-10	MTW-11	MTW-12	MTW-13	MTW-14	MTW-15	MTW-16	MTW-17	MTW-18	MTW-19	MTW-20	MTW-21	MTW-22	MTW-23	MTW-24	MTW-25	MTW-26	MTW-27
TDS	Jan-03	1,180	1,220	1,580	1,940	1,670	2,250	528	1,500	1,480	1,630	1,080	1,490	1,720	4,500	1,380	1,850						
	Sep-03	NA	NA	NA	1,800	2,330	1,930	728	1,185	1,588	1,180	1,558	1,615	1,655	PP	1,255	1,258	850	775	670	1,480		
Total Alkalinity	Jan-03	250	440	698	525	803	960	290	438	633	495	808	480	1,035	1,428	425	275						
	Sep-03	NA	NA	NA	545	980	893	408	478	370	448	800	475	958	PP	435	450	238	258	360	870		
Carbonate/bicarbonate	Jan-03	332	788	1,280	812	1,122	1,182	348	318	319	548	728	552	1,330	1,710	310	687						
	Sep-03	NA	NA	NA	694	834	1,179	488	507	444	507	728	570	1,148	PP	878	552	282	308	428	804		
Chloride	Jan-03	80.3	227	298	241	363	428	70.8	105	82.2	85	227	86.4	282	1,190	87.8	87.8						
	Sep-03	NA	NA	NA	241	810	283	37	80	142	108	260	178	288	PP	82	142	71	74	85	328		
Sulfate	Jan-03	<0.02	1.0	0.84	<0.02	0.8	5.88	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.48	1.82	<0.02	<0.02						
	Sep-03	NA	NA	NA	<0.02	5.12	2.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.92	PP	<0.02	<0.02	<0.02	<0.02	<0.02	16.8		
Sulfate	Jan-03	85.3	32.0	15	284	8.87	7.0	108	218	182	278	104	208	28.3	5.72	178	182						
	Sep-03	NA	NA	NA	230	88	28	85	230	232	288	70	218	85	PP	215	280	115	154	218	80		
Nitrate	Jan-03	32.5	<0.01	1.18	16.4	1.85	6.51	<0.01	27.8	28.1	28.7	5.57	27.8	2.85	0.77	34.2	23.8						
	Sep-03	NA	NA	NA	0.138	<0.01	<0.01	<0.01	0.007	0.012	0.028	<0.01	<0.01	<0.01	PP	0.17	0.018	0.177	<0.01	<0.01	<0.01		
Total Iron	Jan-03	<0.1	0.2	1	<0.1	0.2	10.7	0.16	0.14	<0.1	0.2	<0.1	0.43	8.8	0.8	0.28	<0.1						
	Sep-03	NA	NA	NA	<0.06	52.3	18.7	0.41	<0.06	<0.06	<0.06	<0.06	0.26	14.4	PP	<0.06	<0.06	0.1	<0.06	<0.06	0.44		
Ferrous Iron	Jan-03	<0.03	<0.06	<0.04	<0.03	<0.03	0.49	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03						
	Sep-03	NA	NA	NA	<0.03	3.2	0.88	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	4.35	PP	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		
Manganese	Jan-03	<0.1	3.1	0.87	<0.1	1.48	6.7	1.8	<0.1	<0.1	0.4	0.8	<0.1	0.94	1.77	<0.1	0.49						
	Sep-03	NA	NA	NA	6.07	8.34	12.5	2.48	0.86	0.43	0.4	1.08	<0.03	7	PP	6.12	0.84	<0.03	0.07	0.08	3.21		

ANCHEM0343

# Appendices

ANCHEM0344



# Appendix A

# WELL GAUGING DATA

Project # 030916-TC-1 Date 9/16/03 Client Blakely Env.

Site 8915 Sorensen Ave, Santa Fe Springs, Angeles Chem. Co.

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <u>TOC</u>
MW-04	4					26.41	26.60	
MW-06	4		30.21	0.08		<del>30.21</del>	30.29	
MW-08	4		31.92	0.42		32.34	—	
MW-09	4					34.29	45.90	
MW-10	4					31.68	40.69	
MW-11	2					31.84	39.93	
MW-12	2					32.36	46.10	
MW-13	2					42.16	62.48	
MW-14	2					43.79	65.15	
MW-15	2					44.19	64.75	
MW-16	2					33.48	45.50	
MW-17	2					40.65	66.40	
MW-18	2					38.37	46.22	
MW-19	2		32.46	0.83		33.29	—	
MW-20	2					41.57	67.59	
MW-21	2					42.68	63.15	
MW-22	2					39.87	NO TOB DUE TO TUBING IN WELL	

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

ANCHEM0347

## WELL GAUGING DATA.

Project # 030916-TC-1 Date 9/16/03 Client Blackly Env.

Site 8915 Soerensen Ave, Santa Fe Springs, Angeles Chem Co

[illegible]

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely Env.
Sampler:	HC	Start Date:	9/16/03
Well I.D.:	MW-23	Well Diameter:	2 3 4 6 8
Total Well Depth:	80.15	Depth to Water:	39.55
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade	
		D.O. Meter (if req'd):	VSD HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterra  
Peristaltic  
Extraction Pump  
Other 2" Ground for

Sampling Method:

Bailer  
~~Disposable Bailer~~  
Extraction Port  
Dedicated Tubing  
Other:

start @ 924 @ 3 gpm

Well Diameter	Multplier	Well Diameter	Multplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

26.4 (Gals.) X 3 = 79.2 Gals.  
1 Case Volume Specified Volume Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
933	22.97	6.60	2255	21	27	D.O. 3.92 ORP 120.9
942	22.92	6.63	2265	5	54	3.94 115.4
951	22.94	6.64	2265	5	80	3.94 111.9

Did well dewater? Yes ☒ No Gallons actually evacuated: 80

Sampling Time: 956 DWN=39.65 Sampling Date: 9/16/03

Sample I.D.: MW-23 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0349

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV



# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blaine Env.
Sampler:	MC	Start Date:	9/16/03
Well I.D.:	MW-24	Well Diameter:	2 3 <u>4</u> 6 8
Total Well Depth:	76.85	Depth to Water:	42.69
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	<u>VT</u> Grade	D.O. Meter (if req'd):	<u>CS</u> HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Watertra  
Peristaltic  
Extraction Pump  
2" Groundfos

Sampling Method:

Bailer  
Disposable Bailer  
Extraction Port  
Dedicated Tubing  
Other:

start purge @ 1027 @ 3 gpm

22.2 (Gals.) X	3	=	66.6 Gals.
1 Case Volume	Specified Volume	Calculated Volume	

Well Diameter	Multipplier	Well Diameter	Multipplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or <u>µS</u> )	Turbidity (NTU)	Gals. Removed	Observations	
1034	22.63	6.81	1798	24	23	D.O. 5.47	ORP 90.3
1041	22.60	6.75	1800	9	45	5.49	85.5
1048	22.60	6.74	1799	5	67	5.50	83.2

Did well dewater? Yes No Gallons actually evacuated: 67

Sampling Time: 1052 DTW=42.70 Sampling Date: 9/16/03

Sample I.D.: MW-24 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: MW-1 ANCHEM0350

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely Env.
Sampler:	IK	Start Date:	9/16/03
Well I.D.:	MW-25	Well Diameter:	2 3 <del>4</del> 6 8
Total Well Depth:	80.98	Depth to Water:	44.35
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade	D.O. Meter (if req'd):
			SD HACH

Purge Method:

Sampling Method:

Bailer

Bailer

Water

Disposable Bailer

Disposable Bailer

Peristaltic

Extraction Port

Positive Air Displacement

Extraction Pump

Dedicated Tubing

Electric Submersible

Other 2" Ground/As

Other:

start purge @ 1133 @ 3.0 gpm

23.8 (Gals.) X	3	-	71.4 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1141	22.70	6.77	1883	25	24	D.O. 4.52 ORP 80.6
1149	22.68	6.72	1885	4	48	4.60 77.9
1157	22.66	6.67	1883	4	72	4.63 76.3

Did well dewater? Yes ~~NO~~ Gallons actually evacuated: 72

Sampling Time: 1205 DN=44.38 Sampling Date: 9/16/03

Sample I.D.: MW-25 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0351

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakey Env.
Sampler:	NE	Start Date:	9/16/03
Well I.D.:	MW-14	Well Diameter:	3 4 6 8
Total Well Depth:	65.15	Depth to Water:	43.79
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	ASD	Grade	D.O. Meter (if req'd):
			ASD HACH

Purge Method:

Sampling Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterwa  
Peristaltic  
Extraction Pump  
Other 2" Grand for

Bailer  
Disposable Bailer  
Extraction Port  
Dedicated Tubing  
Other:

start purge @ 1242 @ 1.0 gpm

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

34 (Gals.) X	3	=	10.3 Gals.
1 Case Volume	Specified Volume	Calculated Volume	

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1246	23.41	7.04	2034	9	4	0.0 ORP 3.41 102.3
1250	23.36	6.91	2101	5	8	3.48 97.1
1253	23.39	6.90	2100	4	11	3.42 95.4

Did well dewater? Yes ☒ No ☐ Gallons actually evacuated: 11

Sampling Time: 1300 DTW=43.80 Sampling Date: 9/16/03

Sample I.D.: MW-14 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0352

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely Env.
Sampler:	HC	Start Date:	9/16/03
Well I.D.:	MW-17	Well Diameter:	② 3 4 6 8
Total Well Depth:	66.40	Depth to Water:	40.65
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	YSC	Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterra  
Peristaltic  
Extraction Pump

Other 2" Green Hos

Sampling Method:

Bailer

Disposable Bailer

Extraction Port

Dedicated Tubing

Other:

80% = 45.80

Start @ 1359 @ 1.0 GPM

4.1 (Gals.) X 3 = 12.4 Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1404	24.15	6.82	2481	109	5	0.0 ORP 2.45 83.1
1408	23.72	6.86	2536	59	9	2.97 77.9
1412	23.70	6.85	2530	15	13	2.97 77.4

Did well dewater? Yes ☒ No ☐ Gallons actually evacuated: 13

Sampling Time: 1420 DTN=45.20 Sampling Date: 9/16/03

Sample I.D.: MW-17 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0353

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely ENV.
Sampler:	HC	Start Date:	9/17/03
Well I.D.:	MW-20	Well Diameter:	3 4 6 8
Total Well Depth:	67.59	Depth to Water:	41.57
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	<u>PVE</u> Grade	D.O. Meter (if req'd):	<u>YSI</u> HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterwa  
Peristaltic  
Extraction Pump  
Other 2" Groundfos

Sampling Method:

Bailer  
~~Disposable Bailer~~  
Extraction Port  
Dedicated Tubing  
Other:

start @ 739 @ 1.0 GPM

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

4.2 (Gals.) X 3 = 13 Gals.  
1 Case Volume Specified Volumes Calculated Volumes

Time	Temp. (°F or °C)	pH	Conductivity (mS or <u>µS</u> )	Turbidity (NTU)	Gals. Removed	Observations
744	23.25	6.79	1988	25	5	0.0 ORP 2.81 162.1
748	23.26	6.80	1986	23	9	3.00 161.5
752	23.26	6.79	1986	10	13	3.01 159.5

Did well dewater? Yes NO Gallons actually evacuated: 13

Sampling Time: 803 OTW=41.89 Sampling Date: 9/17/03

Sample I.D.: MW-20 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANK ANCHEM0354

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely Env.
Sampler:	HC	Start Date:	9/17/03
Well I.D.:	MW-15	Well Diameter:	3 4 6 8
Total Well Depth:	64.75	Depth to Water:	44.19
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	<del>PTD</del> Grade	D.O. Meter (if req'd):	<del>SD</del> HACH

Purge Method:

Sampling Method:

Bailer

Bailer

Waterwa

Disposable Bailer

Disposable Bailer

Peristaltic

Extraction Port

Positive Air Displacement

Extraction Pump

Dedicated Tubing

Electric Submersible

Other

Other:

start purge @ 843 @ 1.0 gpm

Well Diameter	Multplier	Well Diameter	Multplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

3.3 (Gals.) X	3	=	9.9 Gals.
1 Case Volume	Specified Volumes	Calculated Volume	

Time	Temp. (°F or °C)	pH	Conductivity (mS or <del>uS</del> )	Turbidity (NTU)	Gals. Removed	Observations
847	23.21	6.83	1947	27	4	DO 0.0 1.98 ORP 101.8
850	23.24	6.79	1946	10	7	2.08 97.0
853	23.24	6.75	1948	6	10	1.97 91.1

Did well dewater? Yes

~~NO~~

Gallons actually evacuated:

Sampling Time:

903

DTN=44.19

Sampling Date:

9/17/03

Sample I.D.:

MW-15

Laboratory:

STS

Analyzed for:

TPH-G BTEX MTBE TPH-D

Other:

Equipment Blank I.D.:

@

Time

Duplicate I.D.:

MW-2

ANCHEM0355

Analyzed for:

TPH-G BTEX MTBE TPH-D

Other:

D.O. (if req'd):

Pre-purge:

mg/L

Post-purge:

mg/L

ORP (if req'd):

Pre-purge:

mV

Post-purge:

mV

# WELL MONITORING DATA SHEET

Project #: 030916-TL-1	Client: Blakely Env
Sampler: H	Start Date: 9/17/03
Well I.D.: MW-21	Well Diameter: 3 4 6 8
Total Well Depth: 63.15	Depth to Water: 43.68
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <del>POD</del> Grade	D.O. Meter (if req'd): <del>ESP</del> HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Watertra  
Peristaltic  
Extraction Pump

~~Other~~ 2' Ground Rod / Gals

Sampling Method:

Bailer  
~~Disposable Bailer~~  
Extraction Port  
Dedicated Tubing  
Other:

Start purge @ 936 @ 1.0 gpm

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

33 (Gals.) X 3 = 99 Gals.
1 Case Volume Specified Volume Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
940	23.29	6.79	1954	55	4	D.C. ORP 1.08 69.6
943	23.10	6.78	1919	51	7	1.88 74.6
946	23.08	6.77	1910	26	10	1.89 77.5

Did well dewater? Yes ~~No~~ Gallons actually evacuated: 10

Sampling Time: 955 DTW = 43.18 Sampling Date: 9/17/03

Sample I.D.: MW-21 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0356

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030918-TC-1	Client:	Blakely Env.
Sampler:	K	Start Date:	9/17/03
Well I.D.:	MW-13	Well Diameter:	2 3 4 6 8
Total Well Depth:	62.48	Depth to Water:	42.16
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	PVC	Grade:	
		D.O. Meter (if req'd):	ST HACH

Purge Method:

Sampling Method:

Bailer

Bailer

Waterra

Disposable Bailer

Disposable Bailer

Peristaltic

Extraction Port

Positive Air Displacement

Extraction Pump

Dedicated Tubing

Electric Submersible

Other 2" 6' gravel for

Other:

Start purge @ 1033 @ 1.0 gpm

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

3.3 (Gals.) X	3	=	9.8 Gals.
1 Case Volume	Specified Volume	Calculated Volume	

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1037	23.28	7.07	1914	90	4	D.O. ORP 4.23 101.1
1040	23.25	6.97	1910	31	7	4.28 99.6
1043	23.25	6.93	1904	18	10	4.27 97.6

Did well dewater? Yes ☒ Gallons actually evacuated: 10

Sampling Time: 1048 DTW=42.20 Sampling Date: 9/17/03

Sample I.D.: MW-13 Laboratory: SIS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0357

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV



# WELL MONITORING DATA SHEET

Project #: <u>030916-TC-1</u>	Client: <u>Blackly Env.</u>
Sampler: <u>HC</u>	Start Date: <u>9/17/03</u>
Well I.D.: <u>MW-12</u>	Well Diameter: <u>Ø 3 4 6 8</u>
Total Well Depth: <u>46.10</u>	Depth to Water: <u>32.36</u>
Before:                      After:	Before:                      After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVS</u> Grade	D.O. Meter (if req'd): <u>YES</u> HACH

Purge Method:

Sampling Method:

Bailer

Waterra

Bailer

Disposable Bailer

Peristaltic

Disposable Bailer

Positive Air Displacement

Extraction Pump

Extraction Port

Electric Submersible

Other 2" Gannett

Dedicated Tubing

Other:

start purge @ 1122 @ 1.0 gpm

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

<u>2.2</u> (Gals.) X <u>3</u> = <u>6.6</u> Gals.
1 Case Volume      Specified Volumes      Calculated Volume

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
<u>1125</u>	<u>23.72</u>	<u>6.36</u>	<u>1239</u>	<u>54</u>	<u>3</u>	<u>Δ.0 ORP</u> <u>6.08 -38.3</u>
<u>1127</u>	<u>23.79</u>	<u>6.43</u>	<u>1303</u>	<u>26</u>	<u>5</u>	<u>6.06 -55.5</u>
<u>1129</u>	<u>23.81</u>	<u>6.49</u>	<u>1313</u>	<u>13</u>	<u>7</u>	<u>6.05 -63.4</u>

Did well dewater? Yes NO

Gallons actually evacuated: 7

Sampling Time: 1134

DTW=32.40

Sampling Date: 9/17/03

Sample I.D.: MW-12

Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @

Time

Duplicate I.D.: ANCHEM0358

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):

Pre-purge:

mg/L

Post-purge:

mg/L

ORP (if req'd):

Pre-purge:

mV

Post-purge:

mV

# WELL MONITORING DATA SHEET

Project #:	030916-7C-1	Client:	Blakely Env.
Sampler:	K	Start Date:	9/17/03
Well I.D.:	MW-9	Well Diameter:	2 3 <u>4</u> 6 8
Total Well Depth:	45.90	Depth to Water:	34.29
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	<u>PVO</u> Grade	D.O. Meter (if req'd):	<u>YSD</u> HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterria  
Peristaltic  
Extraction Pump

Other 2" Ground for

Sampling Method:

Bailer  
Disposable Bailer  
Extraction Port  
Dedicated Tubing  
Other:

Start @ 1211 @ 1.0 gpm

7.5 (Gals.) X	3	=	23 Gals.
1 Case Volume	Specified Volumes	Calculated Volume	

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or $\mu$ S)	Turbidity (NTU)	Gals. Removed	Observations
1219	23.29	6.59	2420	5	8	D.O. 0.09 0.10 48.5
1227	23.43	6.60	2536	8	16	0.08 46.6
1234	23.51	6.61	2540	8	23	0.10 44.8

Did well dewater? Yes No Gallons actually evacuated: 23

Sampling Time: 1240 Sampling Date: 9/17/03

Sample I.D.: MW-9 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0359

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

# WELL MONITORING DATA SHEET

Project #:	030916-TC-1	Client:	Blakely ENV.
Sampler:	MC	Start Date:	9/17/03
Well I.D.:	MW-16	Well Diameter:	3 4 6 8
Total Well Depth:	45.50	Depth to Water:	33.48
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	EVT	Grade	D.O. Meter (if req'd):
			ESI HACH

Purge Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterwa  
Peristaltic  
Extraction Pump  
Other 2" Crowdflo

Sampling Method:

Bailer  
Disposable Bailer  
Extraction Port  
Dedicated Tubing  
Other:

start purge @ 1344 @ 1.0 Gpm

1.9 (Gals.) X 3 = 5.8 Gals.

1 Case Volume Specified Volume Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1346	23.53	7.06	2354	311	2	D.O. 0.04 ORP 21.8
1348	23.62	6.71	2218	398	4	0.10 25.6
1350	23.66	6.70	2219	600	6	0.10 37.2

Did well dewater? Yes ☒ No Gallons actually evacuated: 6

Sampling Time: 1355 Sampling Date: 9/17/03

Sample I.D.: MW-16 Laboratory: STS

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: ANCHEM0360

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV



# WELL MONITORING DATA SHEET

Project #:	030916-TCJ	Client:	Binkley Env
Sampler:	ke	Start Date:	9/18/03
Well I.D.:	MW-11	Well Diameter:	2 3 4 6 8
Total Well Depth:	39.93	Depth to Water:	31.84
Before:	After:	Before:	After:
Depth to Free Product:		Thickness of Free Product (feet):	
Referenced to:	FVG Grade	D.O. Meter (if req'd):	YES HACH

Purge Method:

Sampling Method:

Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible

Waterwa  
Peristaltic  
Extraction Pump

Bailer  
Disposable Bailer  
Extraction Port  
Dedicated Tubing  
Other:

start @ 853 @ 0.5 GPM

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

1.3 (Gals.) X 3 = 3.9 Gals.
1 Case Volume Specified Volume Calculated Volume

Time	Temp. (F or C)	pH	Conductivity (mS or $\mu$ S)	Turbidity (NTU)	Gals. Removed	Observations
857	23.71	6.50	3539	14	2	D.O. ORP 0.09 129.5
859	23.98	6.52	3561	9	3	0.07 133.7
901	24.10	6.52	3560	7	4	0.06 136.6
*	Strong odor					

Did well dewater?	Yes	NO	Gallons actually evacuated:	4
Sampling Time:	905	Sampling Date:	9/18/03	
Sample I.D.:	MW-11	Laboratory:	STS	
Analyzed for:	TPH-G BTEX MTBE TPH-D	Other:		
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	ANCHEM0362	
Analyzed for:	TPH-G BTEX MTBE TPH-D	Other:		
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV



# **Appendix B**

### CHAIN OF CUSTODY RECORD

Lab Job Number B309092

Southland Tech. Services, Inc.  
7801 Telegraph Road, Suite L & K  
Montebello, CA 90640

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.  
Distribution: WHITE with report, PINK to courier.



### CHAIN OF CUSTODY RECORD

Lab Job Number BL 308092

Southland Tech. Services, Inc.  
7801 Telegraph Road, Suite L & K  
Montebello, CA 90640

Tel: (323) 888-0728  
Fax: (323) 888-1509

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.  
Distribution: WHITE with report, PINK to courier.



**Southland Technical Services, Inc.**  
Environmental Laboratories

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10-20-2003

Mr. Hiram Garcia  
Blakely Environmental Investigations, Inc.  
4359 Phelan Road  
Phelan, CA 92371

Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA  
Sample Date: 09-16-2003  
Lab Job No.: BL309092

Dear Mr. Garcia:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 09-16-2003 and analyzed for the following parameters:

EPA 8015M (Gasoline)  
EPA 8260B (VOCs by GC/MS)  
EPA 160.1 (Total Dissolved Solids)  
EPA 352.1 (Nitrate)  
EPA 325.3 (Chloride)  
EPA 375.4 (Sulfate)  
EPA 376.1 (Sulfide)  
EPA 7380 (Total Iron)  
Ferrous Iron  
EPA 7460 (Manganese)  
EPA 310.1 (Alkalinity)  
Standard Method 4500 (Carbonate & Bicarbonate)  
EPA 415.1 (Total Organic Carbon, Dissolved Organic Carbon)

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Chloride, sulfide, Alkalinity, Carbonate & Bicarbonate analyses were subcontracted to Americhem Testing Laboratory. TOC & DOC analyses were subcontracted to Associated Laboratories. Their original reports are attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.  
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.

ANCHEM0367



**Southland Technical Services, Inc.**  
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309092  
Matrix: Water

Date Reported: 10-20-2003  
Date Sampled: 09-16-2003

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED			09-17	09-17-03	09-17-03	09-17-03	09-17-03	09-17-03	09-17-03
DILUTION FACTOR				1	1	1	1	1	1
LAB SAMPLE ID.				BL309092	BL309092	BL309092	BL309092	BL309092	BL309092
CLIENT SAMPLE ID.				-1	-2	-3	-4	-7	-6
				MW-14	MW-17	MW-23	MW-24	MW-1	Trip Blank
COMPOUND	MDL	PQL	MB						
Dichlorodifluoromethane	2	5	ND	ND	ND	ND	ND	ND	ND
Chloromethane	2	5	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	2	ND	5.2	ND	ND	ND	ND	ND
Bromomethane	2	5	ND	ND	ND	ND	ND	ND	ND
Chloroethane	2	5	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	5	ND	274	14.2	ND	ND	ND	ND
Iodomethane	2	5	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	2	5	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	2	5	ND	101	ND	3.1	ND	ND	ND
2,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2	5	ND	49.0	ND	8.7	ND	ND	ND
Bromochloromethane	2	5	ND	ND	ND	ND	ND	ND	ND
Chloroform	2	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	2	5	ND	8.9	8.0	ND	ND	ND	ND
Carbon tetrachloride	2	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND
Benzene	1	1	ND	5.5	ND	ND	ND	ND	ND
Trichloroethene	2	2	ND	12.1	3.9	ND	11.5	11.2	ND
1,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	2	5	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	2	5	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	2	5	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	2	5	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	2	5	ND	ND	ND	ND	ND	ND	ND
Bromoform	2	5	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	2	5	ND	ND	ND	ND	ND	ND	ND

ANCHEM0368



**Southland Technical Services, Inc.**  
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309092  
Matrix: Water

Date Reported: 10-20-2003  
Date Sampled: 09-16-2003

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-14	MW-17	MW-23	MW-24	MW-1	Trip Blank
Toluene	1	1	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2	2	ND	28.3	15.1	4.1	10.7	11.0	ND
1,2-Dibromoethane(EDB)	2	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethan	2	5	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	1	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	1	1	ND	ND	ND	ND	ND	ND	ND
Styrene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethan	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
Sec-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	2	5	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	2	5	ND	ND	ND	ND	ND	ND	ND
Naphthalene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
Acetone	5	25	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5	25	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	5	25	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5	25	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5	25	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	25	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	50	100	ND	ND	ND	ND	ND	ND	ND
MTBE	2	2	ND	ND	ND	ND	ND	ND	ND
ETBE	2	2	ND	ND	ND	ND	ND	ND	ND
DIPE	2	2	ND	ND	ND	ND	ND	ND	ND
TAME	2	2	ND	ND	ND	ND	ND	ND	ND
t-Butyl Alcohol	10	10	ND	ND	ND	ND	ND	ND	ND

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF \* MDL), j=trace concentration.

ANCHEM0369



**Southland Technical Services, Inc.**  
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309092  
Matrix: Water

Date Reported: 10-20-2003  
Date Sampled: 09-16-2003

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED	09-17	09-17-03	09-17-03				
DILUTION FACTOR		1	1				
LAB SAMPLE ID.		BL309092-5	BL309092-8				
CLIENT SAMPLE ID.		MW-25/9-16	MW-25/9-17				
COMPOUND	MDL	PQL	MB				
Dichlorodifluoromethane	2	5	ND	ND	ND		
Chloromethane	2	5	ND	ND	ND		
Vinyl Chloride	2	2	ND	ND	ND		
Bromomethane	2	5	ND	ND	ND		
Chloroethane	2	5	ND	ND	ND		
Trichlorofluoromethane	2	5	ND	ND	ND		
1,1-Dichloroethene	2	5	ND	ND	ND		
Iodomethane	2	5	ND	ND	ND		
Methylene Chloride	2	5	ND	ND	ND		
trans-1,2-Dichloroethene	2	5	ND	ND	ND		
1,1-Dichloroethane	2	5	ND	5.0	4.1 j		
2,2-Dichloropropane	2	5	ND	ND	ND		
cis-1,2-Dichloroethene	2	5	ND	2.4 j	2.8 j		
Bromochloromethane	2	5	ND	ND	ND		
Chloroform	2	5	ND	ND	ND		
1,2-Dichloroethane	2	5	ND	ND	ND		
1,1,1-Trichloroethane	2	5	ND	ND	ND		
Carbon tetrachloride	2	5	ND	ND	ND		
1,1-Dichloropropene	2	5	ND	ND	ND		
Benzene	1	1	ND	ND	ND		
Trichloroethene	2	2	ND	25.0	21.5		
1,2-Dichloropropane	2	5	ND	ND	ND		
Bromodichloromethane	2	5	ND	ND	ND		
Dibromomethane	2	5	ND	ND	ND		
trans-1,3-Dichloropropene	2	5	ND	ND	ND		
cis-1,3-Dichloropropene	2	5	ND	ND	ND		
1,1,2-Trichloroethane	2	5	ND	ND	ND		
1,3-Dichloropropane	2	5	ND	ND	ND		
Dibromochloromethane	2	5	ND	ND	ND		
2-Chloroethylvinyl ether	2	5	ND	ND	ND		
Bromoform	2	5	ND	ND	ND		
Isopropylbenzene	2	5	ND	ND	ND		
Bromobenzene	5	5	ND	ND	ND		

ANCHEM0370



**Southland Technical Services, Inc.**  
Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309092

Matrix: Water

Date Reported: 10-20-2003

Date Sampled: 09-16-2003

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-25/9-16	MW-25/9-17				
Toluene	1	1	ND	ND	ND				
Tetrachloroethene	2	2	ND	51.0	33.4				
1,2-Dibromoethane(EDB)	2	5	ND	ND	ND				
Chlorobenzene	2	5	ND	ND	ND				
1,1,1,2-Tetrachloroethan	2	5	ND	ND	ND				
Ethylbenzene	1	1	ND	ND	ND				
Total Xylenes	1	1	ND	ND	ND				
Styrene	2	5	ND	ND	ND				
1,1,2,2-Tetrachloroethan	2	5	ND	ND	ND				
1,2,3-Trichloropropane	2	5	ND	ND	ND				
n-Propylbenzene	2	5	ND	ND	ND				
2-Chlorotoluene	2	5	ND	ND	ND				
4-Chlorotoluene	2	5	ND	ND	ND				
1,3,5-Trimethylbenzene	2	5	ND	ND	ND				
tert-Butylbenzene	2	5	ND	ND	ND				
1,2,4-Trimethylbenzene	2	5	ND	ND	ND				
Sec-Butylbenzene	2	5	ND	ND	ND				
1,3-Dichlorobenzene	2	5	ND	ND	ND				
p-Isopropyltoluene	2	5	ND	ND	ND				
1,4-Dichlorobenzene	2	5	ND	ND	ND				
1,2-Dichlorobenzene	2	5	ND	ND	ND				
n-Butylbenzene	2	5	ND	ND	ND				
1,2,4-Trichlorobenzene	2	5	ND	ND	ND				
1,2-Dibromo-3-Chloropropane	2	5	ND	ND	ND				
Hexachlorobutadiene	2	5	ND	ND	ND				
Naphthalene	2	5	ND	ND	ND				
1,2,3-Trichlorobenzene	2	5	ND	ND	ND				
Acetone	5	25	ND	ND	ND				
2-Butanone (MEK)	5	25	ND	ND	ND				
Carbon disulfide	5	25	ND	ND	ND				
4-Methyl-2-pentanone	5	25	ND	ND	ND				
2-Hexanone	5	25	ND	ND	ND				
Vinyl Acetate	5	25	ND	ND	ND				
1,4-Dioxane	50	100	ND	ND	ND				
MTBE	2	2	ND	ND	ND				
ETBE	2	2	ND	ND	ND				
DIPE	2	2	ND	ND	ND				
TAME	2	2	ND	ND	ND				
T-Butyl Alcohol	10	10	ND	ND	ND				

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF x MDL).

ANCHEM0371



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-20-2003

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave, Santa Fe Springs  
Matrix: Water  
Batch No.: A117-GW1

Lab Job No.: BL309092  
Date Sampled: 09-16-2003  
Date Received: 09-16-2003  
Date Analyzed: 09-17-2003

EPA 8015M (Gasoline)  
Reporting Units:  $\mu\text{g/L}$  (ppb)

Sample ID	Lab ID	Gasoline (C4-C12)	Method Detection Limit	PQL
Method Blank		ND	50	50
MW-14	BL309092-1	89	50	50
MW-17	BL309092-2	ND	50	50
MW-23	BL309092-3	ND	50	50
MW-24	BL309092-4	ND	50	50
MW-25	BL309092-5	ND	50	50
Trip Blank	BL309092-6	ND	50	50
MW-1	BL309092-7	ND	50	50

ND: Not Detected (at the specified limit)

ANCHEM037E



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-20-2003

**EPA 8015M (TPH)  
Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No.: AI17-GW1

Lab Job No.: BL309092  
Lab Sample ID: BL309092-5  
Date Analyzed: 09-17-2003

**I MS/MSD Report  
Unit: ppb**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1000	925	1,060	92.5	106.0	13.6	30	70-130

**II LCS Result  
Unit: ppb**

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
TPH-g	1,030	1,000	103.0	80-120

ND: Not Detected

ANCHEM0373





**Southland Technical Services, Inc.**  
Environmental Laboratories

10-20-2003

**EPA 8260B  
Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No: 0917-VOAW

Lab Job No.: BL309092  
Lab Sample ID: UR309073-2  
Date Analyzed: 09-17-2003

**I. MS/MSD Report  
Unit: ppb**

Compound	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	18.9	17.7	94.5	88.5	6.6	30	70-130
Benzene	ND	20	24.1	25.0	120.5	125.0	3.7	30	70-130
Trichloro-ethene	ND	20	22.9	21.7	114.5	108.5	5.4	30	70-130
Toluene	ND	20	22.6	23.0	113.0	115.0	1.8	30	70-130
Chlorobenzene	ND	20	21.8	19.9	109.0	99.5	9.1	30	70-130

**II. LCS Result  
Unit: ppb**

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	16.1	20	80.5	80-120
Benzene	23.2	20	116.0	80-120
Trichloro-ethene	19.8	20	99.0	80-120
Toluene	21.2	20	106.0	80-120
Chlorobenzene	20.2	20	101.0	80-120

ND: Not Detected.

ANCHEM0374

## SOUTHLAND TECHNICAL SERVICES, INC.

Page 1 of 1

## CHAIN OF CUSTODY RECORD

Lab Job Number BL309105

Client: <u>Blacky Environmental Investigations, Inc.</u>							Analyses Requested										T.A.T. Requested <input type="checkbox"/> Rush 8 12 24 hours <input type="checkbox"/> 2-3 days <input type="checkbox"/> Normal			
Address: <u>4359 Phelan Rd. Phelan, Ca. 92371</u>							602/8021 (BTEX, MTBE) 8015M (Gasoline) <u>TPH</u> 8015M (Diesel) 8260B (VOCs) 8260B (Oxygenates, BTEX) 8260B (MTBE Confirm.) Doc. Tox. TDS Chloride, Sulfate Nitrate, Alkalinity Fluoride, Iron, Total Iron Cyanide, Bicarbonate Phosphate										Sample Condition <input checked="" type="checkbox"/> Chilled <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Sample seals			
Report Attention	Phone <u>760-868-8572</u>	Fax <u>760-868-8573</u>	Sampled by <u>Trey M. Blain Tech Services</u>														Remarks			
Project Name/No.	Project Site <u>Angeles Chemical Co.</u>																			
Client Sample ID	Lab Sample ID	Sample Collect		Matrix Type	Sample Preserve	No., type* & size of container	602/8021 (BTEX, MTBE)	8015M (Gasoline) <u>TPH</u>	8015M (Diesel)	8260B (VOCs)	8260B (Oxygenates, BTEX)	8260B (MTBE Confirm.)	Doc. Tox. TDS	Chloride, Sulfate	Nitrate, Alkalinity	Fluoride, Iron, Total Iron	Cyanide, Bicarbonate	Phosphate		
MW-20	BL309105-7	9-17-03	8:03	Water	Acid	Seal (G) Seal (R) 2 (U)		X		X			X	X	X	X	X	X		
MW-15	-5	11	9:03	"	"	"		X		X			X	X	X	X	X	X		
MW-21	-8	"	9:55	"	"	"		X		X			X	X	X	X	X	X		
MW-13	-4	"	10:48	"	"	"		X		X			X	X	X	X	X	X		
MW-12	-3	"	11:31	"	"	"		X		X			X	X	X	X	X	X		
MW-26	-9	"	12:00	"	"	"		X		X			X	X	X	X	X	X		
MW-09	-2	"	12:40	"	"	"		X		X			X	X	X	X	X	X		
MW-16	-6	"	13:55	"	"	"		X		X			X	X	X	X	X	X		
MW-02	-1	"	-	"	"	"		X		X			X	X	X	X	X	X		
ANCHEN0375																				
Relinquished by <u>[Signature]</u> Company <u>BEI</u>							Date <u>9-17-03</u> Time <u>2:31 PM</u>							Received by <u>[Signature]</u> Company <u>STC</u>					Container types: M=Metal Tube A=Air Bag P=Plastic bottle G=Glass bottle V=VOA vial	
Relinquished by <u>[Signature]</u> Company <u>BEI</u>							Date <u>9-17-03</u> Time <u>2:31 PM</u>							Received by <u>[Signature]</u> Company <u>STC</u>						

Southland Tech. Services, Inc.  
1801 Telegraph Road, Suite L & K  
Montebello, CA 90640

Tel: (323) 888-0728  
Fax: (323) 888-1509

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.  
Distribution: WHITE with report, PINK to courier.



**Southland Technical Services, Inc.**  
Environmental Laboratories

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10-21-2003

Mr. Hiram Garcia  
Blakely Environmental Investigations, Inc.  
4359 Phelan Road  
Phelan, CA 92371

Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA  
Sample Date: 09-17-2003  
Lab Job No.: BL309105

Dear Mr. Garcia:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 09-17-2003 and analyzed for the following parameters:

EPA 8015M (Gasoline)  
EPA 8260B (VOCs by GC/MS)  
EPA 160.1 (Total Dissolved Solids)  
EPA 352.1 (Nitrate)  
EPA 325.3 (Chloride)  
EPA 375.4 (Sulfate)  
EPA 376.1 (Sulfide)  
EPA 7380 (Total Iron)  
Ferrous Iron  
EPA 7460 (Manganese)  
EPA 310.1 (Alkalinity)  
Standard Method 4500 (Carbonate & Bicarbonate)  
EPA 415.1 (Total Organic Carbon, Dissolved Organic Carbon)

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Chloride, sulfide, Alkalinity, Carbonate & Bicarbonate analyses were subcontracted to Americhem Testing Laboratory. TOC & DOC analyses were subcontracted to Associated Laboratories. Their original reports are attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.  
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.

ANCHEM0376



# Southland Technical Services, Inc.

## Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309105  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-17-2003

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED				09-24	09-24-03	09-24-03	09-24-03	09-24-03	09-24-03	09-24-03
DILUTION FACTOR					2.5	10	2.5	1	2	25
LAB SAMPLE ID.					BL309105	BL309105	BL309105	BL309105	BL309105	BL309105
CLIENT SAMPLE ID.					-1	-2	-3	-4	-5	-6
COMPOUND				MDL	PQL	MB				
Dichlorodifluoromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	2	ND	70.6	296	36.0	ND	51	588	
Bromomethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	5	ND	108	1,620	14.5	27.2	98.0	2,470	
Iodomethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	2	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	2	5	ND	81.8	1,950	505	ND	88.0	4,450	
2,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2	5	ND	402	648	8.0j	25.2	436	998	
Bromochloromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	2	5	ND	6.0 j	ND	8.7j	ND	6.4 j	ND	
Carbon tetrachloride	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	1	ND	6.0	75.0	5.5	ND	5.6	72.0	
Trichloroethene	2	2	ND	18.8	47.0	7.5	95.2	16.0	2,530	
1,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	2	5	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	2	5	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	2	5	ND	ND	ND	17.0	ND	ND	ND	ND
Bromobenzene	2	5	ND	ND	ND	ND	ND	ND	ND	ND

ANCHEM0377



# Southland Technical Services, Inc.

Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309105  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-17-2003

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-02	MW-09	MW-12	MW-13	MW-15	MW-16
Toluene	1	1	ND	3.1	ND	ND	ND	2.0	ND
Tetrachloroethene	2	2	ND	45.1	131	12.5	145	36.0	275
1,2-Dibromoethane (EDB)	2	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	2	5	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	1	ND	ND	ND	52.5	2.0	ND	ND
Total Xylenes	1	1	ND	ND	ND	9.0	ND	ND	ND
Styrene	2	5	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	2	5	ND	ND	ND	43	ND	ND	ND
2-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	2	5	ND	ND	ND	92.0	ND	ND	ND
tert-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2	5	ND	ND	ND	110	ND	ND	ND
Sec-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	2	5	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	2	5	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	2	5	ND	ND	ND	ND	ND	ND	ND
Naphthalene	2	5	ND	ND	ND	22.0	ND	ND	ND
1,2,3-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND	ND
Acetone	5	25	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	5	25	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	5	25	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5	25	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5	25	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	25	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	50	100	ND	ND	7,150	ND	ND	ND	ND
MTBE	2	2	ND	ND	ND	ND	ND	ND	ND
ETBE	2	2	ND	ND	ND	ND	ND	ND	ND
DIPE	2	2	ND	ND	ND	ND	ND	ND	ND
TAME	2	2	ND	ND	ND	ND	ND	ND	ND
t-Butyl Alcohol	10	10	ND	ND	ND	ND	ND	ND	ND

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF \* MDL), j=trace concentration.

ANCHEM0378



# Southland Technical Services, Inc.

## Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309105  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-17-2003

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED			09-24	09-24-03	09-24-03	09-24-03			
DILUTION FACTOR				1	5	50			
LAB SAMPLE ID.				BL309105	BL309105	BL309105			
				-7	-8	-9			
CLIENT SAMPLE ID.				MW-20	MW-21	MW-26			
COMPOUND	MDL	PQL	MB						
Dichlorodifluoromethane	2	5	ND	ND	ND	ND			
Chloromethane	2	5	ND	ND	ND	ND			
Vinyl Chloride	2	2	ND	ND	31.5	ND			
Bromomethane	2	5	ND	ND	ND	ND			
Chloroethane	2	5	ND	ND	ND	ND			
Trichlorofluoromethane	2	5	ND	ND	ND	ND			
1,1-Dichloroethene	2	5	ND	45.7	1,800	5,600			
Iodomethane	2	5	ND	ND	ND	ND			
Methylene Chloride	2	5	ND	ND	ND	14,600			
trans-1,2-Dichloroethene	2	5	ND	ND	12.0 j	120			
1,1-Dichloroethane	2	5	ND	28.5	1,370	1,670			
2,2-Dichloropropane	2	5	ND	ND	ND	ND			
cis-1,2-Dichloroethene	2	5	ND	4.6	2,450	2,130			
Bromochloromethane	2	5	ND	ND	ND	ND			
Chloroform	2	5	ND	ND	ND	ND			
1,2-Dichloroethane	2	5	ND	ND	ND	ND			
1,1,1-Trichloroethane	2	5	ND	8.6	130	1,790			
Carbon tetrachloride	2	5	ND	ND	ND	ND			
1,1-Dichloropropene	2	5	ND	ND	ND	ND			
Benzene	1	1	ND	ND	53.0	270			
Trichloroethene	2	2	ND	6.2	180	2,100			
1,2-Dichloropropane	2	5	ND	ND	ND	ND			
Bromodichloromethane	2	5	ND	ND	ND	ND			
Dibromomethane	2	5	ND	ND	ND	ND			
trans-1,3-Dichloropropene	2	5	ND	ND	ND	ND			
cis-1,3-Dichloropropene	2	5	ND	ND	ND	ND			
1,1,2-Trichloroethane	2	5	ND	ND	ND	ND			
1,3-Dichloropropane	2	5	ND	ND	ND	ND			
Dibromochloromethane	2	5	ND	ND	ND	ND			
2-Chloroethylvinyl ether	2	5	ND	ND	ND	ND			
Bromoform	2	5	ND	ND	ND	ND			
Isopropylbenzene	2	5	ND	ND	16.5 j	ND			
Bromobenzene	5	5	ND	ND	ND	ND			

ANCHEM0379



# Southland Technical Services, Inc.

## Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309105  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-17-2003

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-20	MW-21	MW-26			
Toluene	1	1	ND	ND	10.0	10,500			
Tetrachloroethene	2	2	ND	18.3	232	2,930			
1,2-Dibromoethane(EDB)	2	5	ND	ND	ND	ND			
Chlorobenzene	2	5	ND	ND	ND	ND			
1,1,1,2-Tetrachloroethan	2	5	ND	ND	ND	ND			
Ethylbenzene	1	1	ND	ND	5.5	2,900			
Total Xylenes	1	1	ND	ND	93.0	6,870			
Styrene	2	5	ND	ND	ND	ND			
1,1,2,2-Tetrachloroethan	2	5	ND	ND	ND	ND			
1,2,3-Trichloropropane	2	5	ND	ND	ND	ND			
n-Propylbenzene	2	5	ND	ND	10.5 j	ND			
2-Chlorotoluene	2	5	ND	ND	ND	ND			
4-Chlorotoluene	2	5	ND	ND	ND	ND			
1,3,5-Trimethylbenzene	2	5	ND	ND	ND	170j			
tert-Butylbenzene	2	5	ND	ND	ND	ND			
1,2,4-Trimethylbenzene	2	5	ND	ND	20.3j	555			
Sec-Butylbenzene	2	5	ND	ND	ND	ND			
1,3-Dichlorobenzene	2	5	ND	ND	ND	ND			
p-Isopropyltoluene	2	5	ND	ND	ND	ND			
1,4-Dichlorobenzene	2	5	ND	ND	ND	ND			
1,2-Dichlorobenzene	2	5	ND	ND	ND	ND			
n-Butylbenzene	2	5	ND	ND	ND	ND			
1,2,4-Trichlorobenzene	2	5	ND	ND	ND	ND			
1,2-Dibromo-3-Chloropropane	2	5	ND	ND	ND	ND			
Hexachlorobutadiene	2	5	ND	ND	ND	ND			
Naphthalene	2	5	ND	ND	ND	125j			
1,2,3-Trichlorobenzene	2	5	ND	ND	ND	ND			
Acetone	5	25	ND	ND	ND	24,500			
2-Butanone (MEK)	5	25	ND	ND	ND	11,000			
Carbon disulfide	5	25	ND	ND	ND	ND			
4-Methyl-2-pentanone	5	25	ND	ND	ND	7,350			
2-Hexanone	5	25	ND	ND	ND	ND			
Vinyl Acetate	5	25	ND	ND	ND	ND			
1,4-Dioxane	50	100	ND	88 j	ND	ND			
MTBE	2	2	ND	ND	ND	ND			
ETBE	2	2	ND	ND	ND	ND			
DIPE	2	2	ND	ND	ND	ND			
TAME	2	2	ND	ND	ND	ND			
T-Butyl Alcohol	10	10	ND	ND	ND	ND			

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF x MDL).

ANCHEM0380



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave, Santa Fe Springs  
Matrix: Water  
Batch No.: AI22-GW1

Lab Job No.: BL309105  
Date Sampled: 09-17-2003  
Date Received: 09-17-2003  
Date Analyzed: 09-22-2003

**EPA 8015M (Gasoline)**  
**Reporting Units: µg/L (ppb)**

Sample ID	Lab ID	Gasoline (C4-C12)	Method Detection Limit	PQL
Method Blank		ND	50	50
MW-02	BL309105-1	228	50	50
MW-09	BL309105-2	1,280	50	50
MW-12	BL309105-3	1,300	50	50
MW-13	BL309105-4	106	50	50
MW-15	BL309105-5	226	50	50
MW-16	BL309105-6	1,460	50	50
MW-20	BL309105-7	ND	50	50
MW-21	BL309105-8	998	50	50
MW-26	BL309105-9	59,200	50	50

ND: Not Detected (at the specified limit)

ANCHEM0381





**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

**EPA 8015M (TPH)  
Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No.: AI22-GW1

Lab Job No.: BL309105  
Lab Sample ID: R309132-1  
Date Analyzed: 09-23-2003

**I MS/MSD Report  
Unit: ppb**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1000	994	1,100	99.4	110.0	10.1	30	70-130

**II LCS Result  
Unit: ppb**

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
TPH-g	1,060	1,000	106.0	80-120

ND: Not Detected

ANCHEM0382



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

**EPA 8260B**  
**Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No: 0924-VOAW

Lab Job No.: BL309105  
Lab Sample ID: R309116-3  
Date Analyzed: 09-24-2003

**I. MS/MSD Report**  
Unit: ppb

Compound	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	23.2	26.0	116.0	130.0	11.4	30	70-130
Benzene	ND	20	23.5	24.5	117.5	122.5	4.2	30	70-130
Trichloro-ethene	ND	20	21.4	21.2	107.0	106.0	0.9	30	70-130
Toluene	ND	20	21.5	23.8	107.5	119.0	10.2	30	70-130
Chlorobenzene	ND	20	20.4	21.4	102.0	107.0	4.8	30	70-130

**II. LCS Result**  
Unit: ppb

Compound	LCS Report Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	20.0	20	100.0	80-120
Benzene	18.8	20	94.0	80-120
Trichloro-ethene	18.9	20	94.5	80-120
Toluene	18.4	20	92.0	80-120
Chlorobenzene	17.0	20	85.0	80-120

ND: Not Detected (at the specified limit)

ANCHEM0383

### CHAIN OF CUSTODY RECORD

Lab Job Number BL30914

Southland Tech. Services, Inc.  
7801 Telegraph Road, Suite L & K  
Montebello, CA 90640

Tel: (323) 888-0728  
Fax: (323) 888-1509

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.  
Distribution: WHITE with report, PINK to courier.



**Southland Technical Services, Inc.**  
Environmental Laboratories

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10-21-2003

Mr. Hiram Garcia  
Blakely Environmental Investigations, Inc.  
4359 Phelan Road  
Phelan, CA 92371

Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave., Santa Fe Springs, CA  
Sample Date: 09-18-2003  
Lab Job No.: BL309114

Dear Mr. Garcia:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 09-18-2003 and analyzed for the following parameters:

- EPA 8015M (Gasoline)
- EPA 8260B (VOCs by GC/MS)
- EPA 160.1 (Total Dissolved Solids)
- EPA 352.1 (Nitrate)
- EPA 325.3 (Chloride)
- EPA 375.4 (Sulfate)
- EPA 376.1 (Sulfide)
- EPA 7380 (Total Iron)
- Ferrous Iron
- EPA 7460 (Manganese)
- EPA 310.1 (Alkalinity)
- Standard Method 4500 (Carbonate & Bicarbonate)
- EPA 415.1 (Total Organic Carbon, Dissolved Organic Carbon)

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Chloride, sulfide, Alkalinity, Carbonate & Bicarbonate analyses were subcontracted to Americhem Testing Laboratory. TOC & DOC analyses were subcontracted to Associated Laboratories. Their original reports are attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.  
Laboratory Director

Enclosures

ANCHEM0385

This cover letter is an integral part of this analytical report.



# Southland Technical Services, Inc.

## Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309114  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-18-2003

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: ppb

DATE ANALYZED			09-24	09-24-03	09-24-03	09-24-03	09-24-03	09-24-03	
DILUTION FACTOR				100	200	25	100	1	
LAB SAMPLE I.D.				BL309114 -1	BL309114 -2	BL309114 -3	BL309114 -4	BL309114 -5	
CLIENT SAMPLE I.D.				MW-03	MW-10	MW-11	MW-18	Trip Blank	
COMPOUND	MDL	PQL	MB						
Dichlorodifluoromethane	2	5	ND	ND	ND	ND	ND	ND	
Chloromethane	2	5	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	2	2	ND	4,220	4,510	1,510	800	ND	
Bromomethane	2	5	ND	ND	ND	ND	ND	ND	
Chloroethane	2	5	ND	1,030	940 j	1,700	460 j	ND	
Trichlorofluoromethane	2	5	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	2	5	ND	1,490	1,760	1,050	4,260	ND	
Iodomethane	2	5	ND	ND	ND	ND	ND	ND	
Methylene Chloride	2	5	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	2	5	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	2	5	ND	48,500	47,400	43,000	7,040	ND	
2,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	2	5	ND	9,310	9,290	6,950	15,900	ND	
Bromochloromethane	2	5	ND	ND	ND	ND	ND	ND	
Chloroform	2	5	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	2	5	ND	ND	ND	103 j	ND	ND	
1,1,1-Trichloroethane	2	5	ND	4,800	4,510	ND	420 j	ND	
Carbon tetrachloride	2	5	ND	ND	ND	ND	ND	ND	
1,1-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	
Benzene	1	1	ND	400	340	775	380	ND	
Trichloroethene	2	2	ND	ND	ND	ND	ND	ND	
1,2-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	2	5	ND	ND	ND	ND	ND	ND	
Dibromomethane	2	5	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	2	5	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	2	5	ND	ND	ND	ND	ND	ND	
1,3-Dichloropropane	2	5	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	2	5	ND	ND	ND	ND	ND	ND	
2-Chloroethylvinyl ether	2	5	ND	ND	ND	ND	ND	ND	
Bromoform	2	5	ND	ND	ND	ND	ND	ND	
Isopropylbenzene	2	5	ND	ND	ND	165	ND	ND	
Bromobenzene	2	5	ND	ND	ND	ND	ND	ND	

ANCHEM0386



# Southland Technical Services, Inc.

## Environmental Laboratories

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.

Lab Job No.: BL309114  
Matrix: Water

Date Reported: 10-21-2003  
Date Sampled: 09-18-2003

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: (ppb)

COMPOUND	MDL	PQL	MB	MW-03	MW-10	MW-11	MW-18	Trip Blank
Toluene	1	1	ND	16,000	13,800	4,030	3,700	ND
Tetrachloroethene	2	2	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	2	5	ND	ND	ND	ND	ND	ND
Chlorobenzene	2	5	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	2	5	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	1	ND	1,570	1,360	1,010	740	ND
Total Xylenes	1	1	ND	4,950	4,460	1,320	2,620	ND
Styrene	2	5	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	2	5	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	2	5	ND	ND	ND	ND	ND	ND
n-Propylbenzene	2	5	ND	ND	ND	303	ND	ND
2-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	2	5	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	2	5	ND	449	320 j	570	400 j	ND
tert-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2	5	ND	1,690	1,430	1,830	1,680	ND
Sec-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	2	5	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2	5	ND	ND	ND	ND	ND	ND
n-Butylbenzene	2	5	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	2	5	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	2	5	ND	ND	ND	ND	ND	ND
Naphthalene	2	5	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	2	5	ND	ND	ND	ND	ND	ND
Acetone	5	25	ND	76,500	73,000	6,950	44,200	ND
2-Butanone (MEK)	5	25	ND	64,000	58,000	5,580	32,000	ND
Carbon disulfide	5	25	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5	25	ND	11,100	10,900	1,370	4,100	ND
2-Hexanone	5	25	ND	ND	ND	ND	ND	ND
Vinyl Acetate	5	25	ND	ND	ND	ND	ND	ND
1,4-Dioxane	50	100	ND	ND	ND	ND	ND	ND
MTBE	2	2	ND	ND	ND	ND	ND	ND
ETBE	2	2	ND	ND	ND	ND	ND	ND
DIPE	2	2	ND	ND	ND	ND	ND	ND
TAME	2	2	ND	ND	ND	ND	ND	ND
t-Butyl Alcohol	10	10	ND	ND	ND	ND	ND	ND

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF x MDL); j=trace concentration.

ANCHEM0387



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Project Site: 8915 Sorensen Ave, Santa Fe Springs  
Matrix: Water  
Batch No.: AI23-GW1

Lab Job No.: BL309114  
Date Sampled: 09-18-2003  
Date Received: 09-18-2003  
Date Analyzed: 09-23-2003

**EPA 8015M (Gasoline)**  
**Reporting Units: µg/L (ppb)**

Sample ID	Lab ID	Gasoline (C4-C12)	Method Detection Limit	PQL
Method Blank		ND	50	50
MW-03	BL309114-1	85,200	50	50
MW-10	BL309114-2	69,600	50	50
MW-11	BL309114-3	30,200	50	50
MW-18	BL309114-4	44,900	50	50
Trip Blank	BL309114-5	ND	50	50

ND: Not Detected (at the specified limit)

ANCHEM0388



**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

**EPA 8015M (TPH)  
Batch QA/QC Report**

Client: Blakey Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No.: AI23-GW1

Lab Job No.: BL309114  
Lab Sample ID: R309116-3  
Date Analyzed: 09-23-2003

**I. MS/MSD Report  
Unit: ppb**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1000	1,060	1,030	106.0	103.0	2.9	30	70-130

**II. LCS Result  
Unit: ppb**

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
TPH-g	959	1,000	95.9	80-120

ND: Not Detected

ANCHEM0389





**Southland Technical Services, Inc.**  
Environmental Laboratories

10-21-2003

**EPA 8260B**  
**Batch QA/QC Report**

Client: Blakely Environmental Investigations, Inc.  
Project: Angeles Chemical Co.  
Matrix: Water  
Batch No: 0924-VOAW

Lab Job No.: BL309114  
Lab Sample ID: R309116-3  
Date Analyzed: 09-24-2003

**I MS/MSD Report**  
Unit: ppb

Compound	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	23.2	26.0	116.0	130.0	11.4	30	70-130
Benzene	ND	20	23.5	24.5	117.5	122.5	4.2	30	70-130
Trichloro-ethene	ND	20	21.4	21.2	107.0	106.0	0.9	30	70-130
Toluene	ND	20	21.5	23.8	107.5	119.0	10.2	30	70-130
Chlorobenzene	ND	20	20.4	21.4	102.0	107.0	4.8	30	70-130

**II LCS Result**  
Unit: ppb

Compound	LCS Report Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	20.0	20	100.0	80-120
Benzene	18.8	20	94.0	80-120
Trichloro-ethene	18.9	20	94.5	80-120
Toluene	18.4	20	92.0	80-120
Chlorobenzene	17.0	20	85.0	80-120

ND: Not Detected (at the specified limit)

ANCHEM0390



# ASSOCIATED LABORATORIES

806 N. Batavia • Orange, CA 92668  
(714) 771-6900 • Fax: (714) 538-1209

## CHAIN OF CUSTODY RECORD

Date 9/18/03 Page 1 of 2

117097

CLIENT <u>Southland Tech. Services</u>	PROJECT MANAGER <u>Guokui LIAD</u>	Samples Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> County Seals Intact Yes <input type="checkbox"/> No <input type="checkbox"/> Sample Ambient <input type="checkbox"/> Cooled <input checked="" type="checkbox"/> Frozen <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr. <input type="checkbox"/> Regular <input checked="" type="checkbox"/> 48 Hr. <input type="checkbox"/>
ADDRESS <u>7801 Telegraph Rd. #L</u> <u>Montebello, CA 90640</u>	PHONE NUMBER <u>323 888 0728</u>	
PROJECT NAME <u>Angeleno Chemical</u>	SAMPLERS: (Signature) _____	

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE			NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
				WATER	AIR	SOLID			
1 - MW-14		9/16/03		✓			1		Total Org. Carbon/Dissolved Org. Carbon
2 - MW-17		"		✓					TOC/DOC
3 - MW-23		"		✓					" "
4 - MW-24		"		✓					" "
5 - MW-25		"		✓					" "
6 - MW-09		9/17/03		✓					" "
7 - MW-12		"		✓					" "
8 - MW-13		"		✓					" "
9 - MW-15		"		✓					" "
10 - MW-16	16	"		✓					" "
11 - MW-20		"		✓					" "
12 - MW-21		"		✓					" "
13 - MW-26		"		✓					" "

ANCHER0391

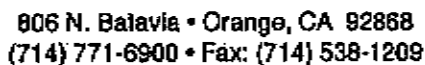
Relinquished by: (Signature) <u>Guokui LIAD</u>	Received by: (Signature) <u>Kirsten Ford</u>	Date/Time <u>9/18 13:20</u>
Relinquished by: (Signature)	Received by Laboratory for analysis: (Signature) <u>9-19-03 8:55</u>	Date/Time

Special Instructions:

I hereby authorize the performance of the above indicated work.

pt web

DISTRIBUTION: White with report. Yellow to AL, Pink to Courier



Date 9/18/03 Page 2 of 2

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date/Time 9/18 13:20	I hereby authorize the performance of the above indicated work.  <i>[Signature]</i>
Relinquished by: (Signature)	Received by Laboratory for analysis: (Signature)	Date/Time	
Special Instructions:			DISTRIBUTION: White with report. Yellow to AL, Pink to Courier

**ASSOCIATED LABORATORIES**

806 North Batavia - Orange, California 92868 - 714/771-6900

FAX 714/538-1209

CLIENT Southland Technical Services  
ATTN: Roger Wang  
7801 Telegraph Rd.- Suite L  
Montebello, CA 90640

(6304)

LAB REQUEST 117097

REPORTED 09/29/2003

RECEIVED 09/18/2003

PROJECT Angeles Chemical

SUBMITTER Client

**COMMENTS**

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<u>Order No.</u>	<u>Client Sample Identification</u>
464228	MW-14
464229	MW-17
464230	MW-23
464231	MW-24
464232	MW-25
464233	MW-09
464234	MW-12
464235	MW-13
464236	MW-15
464237	MW-16
464238	MW-20
464239	MW-21
464240	MW-26

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.  
Vice President

**NOTE:** Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

The reports of the Associated Laboratories are confidential property of our clients and may not be reproduced or used for publication in part or in full without our written permission. This is for the mutual protection of the public, our clients, and ourselves.

TESTING & CONSULTING  
Chemical  
Microbiological  
Environmental

Order #: 464228 Client Sample ID: MW-14  
Matrix: WATER  
Date Sampled: 09/16/2003

Analyte	Result	DLR	Units	Date/Analyst
0060 Total Organic Carbon (TOC)				
Dissolved Organic Carbon	2.8	0.5	mg/L	09/22/03 QP
Total Organic Carbon	3.3	0.5	mg/L	09/22/03 QP

Order #: 464229 Client Sample ID: MW-17  
Matrix: WATER  
Date Sampled: 09/16/2003

Analyte	Result	DLR	Units	Date/Analyst
0060 Total Organic Carbon (TOC)				
Dissolved Organic Carbon	1.3	0.5	mg/L	09/22/03 QP
Total Organic Carbon	1.6	0.5	mg/L	09/22/03 QP

Order #: 464230 Client Sample ID: MW-23  
Matrix: WATER  
Date Sampled: 09/16/2003

Analyte	Result	DLR	Units	Date/Analyst
0060 Total Organic Carbon (TOC)				
Dissolved Organic Carbon	1.4	0.5	mg/L	09/22/03 QP
Total Organic Carbon	1.9	0.5	mg/L	09/22/03 QP

Order #: 464231 Client Sample ID: MW-24  
Matrix: WATER  
Date Sampled: 09/16/2003

Analyte	Result	DLR	Units	Date/Analyst
0060 Total Organic Carbon (TOC)				
Dissolved Organic Carbon	1.0	0.5	mg/L	09/22/03 QP
Total Organic Carbon	2.0	0.5	mg/L	09/22/03 QP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit



CLIENT Southland Technical Services  
ATTN: Roger Wang  
7801 Telegraph Rd.- Suite L  
Montebello, CA 90640

(6304)

LAB REQUEST 117097

REPORTED 09/29/2003  
RECEIVED 09/18/2003

PROJECT Angeles Chemical

SUBMITTER Client

## COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<u>Order No.</u>	<u>Client Sample Identification</u>
464241	MW-10
464242	MW-11
464243	WW-18
464244	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

  
Edward S. Behare, Ph.D.  
Vice President

**NOTE:** Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING  
Chemical  
Microbiological  
Environmental

Order #: 464232

Client Sample ID: MW-25

Matrix: WATER

Date Sampled: 09/16/2003

## Analyte

Result

DLR

Units

Date/Analyst

## 9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	1.2	0.5	mg/L	09/22/03	QP
Total Organic Carbon	1.5	0.5	mg/L	09/22/03	QP

Order #: 464233

Client Sample ID: MW-09

Matrix: WATER

Date Sampled: 09/17/2003

## Analyte

Result

DLR

Units

Date/Analyst

## 9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	15	0.5	mg/L	09/22/03	QP
Total Organic Carbon	15	0.5	mg/L	09/22/03	QP

Order #: 464234

Client Sample ID: MW-12

Matrix: WATER

Date Sampled: 09/17/2003

## Analyte

Result

DLR

Units

Date/Analyst

## 9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	1.8	0.5	mg/L	09/22/03	QP
Total Organic Carbon	2.2	0.5	mg/L	09/22/03	QP

Order #: 464235

Client Sample ID: MW-13

Matrix: WATER

Date Sampled: 09/17/2003

## Analyte

Result

DLR

Units

Date/Analyst

## 9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	1.6	0.5	mg/L	09/22/03	QP
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit



Total Organic Carbon	2.0	0.5	mg/L	09/22/03	QP
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Order #: 464236 Client Sample ID: MW-15  
Matrix: WATER  
Date Sampled: 09/17/2003

Analyte	Result	DLR	Units	Date/Analyst
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9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	1.7	0.5	mg/L	09/22/03	QP
Total Organic Carbon	2.1	0.5	mg/L	09/22/03	QP

Order #: 464237 Client Sample ID: MW-16  
Matrix: WATER  
Date Sampled: 09/17/2003

Analyte	Result	DLR	Units	Date/Analyst
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9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	17	0.5	mg/L	09/22/03	QP
Total Organic Carbon	18	0.5	mg/L	09/22/03	QP

Order #: 464238 Client Sample ID: MW-20  
Matrix: WATER  
Date Sampled: 09/17/2003

Analyte	Result	DLR	Units	Date/Analyst
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9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	1.4	0.5	mg/L	09/22/03	QP
Total Organic Carbon	1.9	0.5	mg/L	09/22/03	QP

Order #: 464239 Client Sample ID: MW-21  
Matrix: WATER  
Date Sampled: 09/17/2003

Analyte	Result	DLR	Units	Date/Analyst
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9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	2.0	0.5	mg/L	09/22/03	QP
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit





Total Organic Carbon 2.3 0.5 mg/L 09/22/03 QP

Order #: 464240

Client Sample ID: MW-26

Matrix: WATER

Date Sampled: 09/17/2003

Analyte

Result

DLR

Units

Date/Analyst

9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	71		mg/L	09/22/03	QP
Total Organic Carbon	83		mg/L	09/22/03	QP

Order #: 464241

Client Sample ID: MW-10

Matrix: WATER

Date Sampled: 09/18/2003

Analyte

Result

DLR

Units

Date/Analyst

9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	604	12.5	mg/L	09/22/03	QP
Total Organic Carbon	670	12.5	mg/L	09/22/03	QP

Order #: 464242

Client Sample ID: MW-11

Matrix: WATER

Date Sampled: 09/18/2003

Analyte

Result

DLR

Units

Date/Analyst

9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	169	2.5	mg/L	09/22/03	QP
Total Organic Carbon	185	2.5	mg/L	09/22/03	QP

Order #: 464243

Client Sample ID: WW-18

Matrix: WATER

Date Sampled: 09/18/2003

Analyte

Result

DLR

Units

Date/Analyst

9060 Total Organic Carbon (TOC)

Dissolved Organic Carbon	208	2.5	mg/L	09/22/03	QP
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DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit



Total Organic Carbon,

220

2.5 mg/L

09/22/03 QP

Order #: 464244

Client Sample ID: Laboratory Method Blank

Matrix: WATER

Analyte	Result	DLR	Units	Date/Analyst
9060 Total Organic Carbon (TOC)				
Dissolved Organic Carbon	ND	0.5	mg/L	09/22/03 QP
Total Organic Carbon	ND	0.5	mg/L	09/22/03 QP

ANCHEM0399

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit

ASSOCIATED LABORATORIES Analytical Results Report

Lab Request 117097 results page 5 of 5



**ASSOCIATED LABORATORIES  
QA REPORT FORM**

QC Sample: LR 117097-2

Matrix: WATER

Prep. Date: 09/22/03

Analysis Date: 09/22/03

ID#s in Batch: LR 117097

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT**

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
TOC	415.1	1.6	10	11.2	11.7	96	101	4

ND = "U" - Not Detected

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate

%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 80 - 120

RPD LIMITS = 20

**PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS**

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	9.9	10	99	80%	120%

Value = Preparation Blank Value; ND = Not-Detected

LCS Result = Lab Control Sample Result

True = True Value of LCS

L.Limit / H.Limit = LCS Control Limits



**Lab Job Number**

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.  
Distribution: WHITE with report, PINK to courier.



**AmeriChem  
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Laboratory**

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Orange, CA 92865

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FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-1**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-09, 9/17/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

<b>ANALYSIS</b>	<b>TEST RESULT mg/l</b>	<b>DET. LIMIT mg/l</b>	<b>METHOD EPA</b>
Chloride	241	0.1	325.3
Sulfate	250	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,600	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron	ND	0.05	236.1
Manganese	0.07	0.05	243.2
Carbonate	654	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	545	1.0	310.1
Nitrate	0.138	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



**AmeriChem  
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## Analytical Report

**REPORT NUMBER: AL-4966-9**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-10, 9/18/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	510	0.1	325.3
Sulfate	96	1.0	375.4
Sulfide, dissolved	5.12	0.05	376.1
TDS	2,330	5.0	160.1
Ferrous iron	3.20	0.05	Colorimetry
Iron (total)	52.3	0.05	236.1
Manganese	5.24	0.05	243.2
Carbonate	804	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	980	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director

ANCHEM0404



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Orange, CA 92365

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## Analytical Report

**REPORT NUMBER: AL-4966-10**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-11, 9/18/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	383	0.1	325.3
Sulfate	26	1.0	375.4
Sulfide, dissolved	2.56	0.05	376.1
TDS	1,935	5.0	160.1
Ferrous iron	9.98	0.05	Colorimetry
Iron (total)	18.7	0.05	236.1
Manganese	12.5	0.05	243.2
Carbonate	1,176	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	955	1.0	310.1
Nitrate	ND	0.01	353.3

TDS=Total dissolved solids

Peter T. Wu  
Lab Director





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## Analytical Report

**REPORT NUMBER: AL-4966-2**

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-12, 9/17/03

**DATE RECEIVED: 09/18/03**

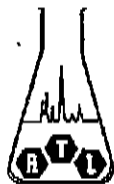
**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	57	0.1	325.3
Sulfate	85	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	735	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	0.41	0.05	236.1
Manganese	2.49	0.05	243.2
Carbonate	489	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	408	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director

ANCHEM0406



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## Analytical Report

**REPORT NUMBER: AL-4966-3**

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-13, 9/17/03

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	99	0.1	325.3
Sulfate	230	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,185	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.66	0.05	243.2
Carbonate	507	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	473	1.0	310.1
Nitrate	0.027	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



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## Analytical Report

**REPORT NUMBER: AL-4966-12**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-14, 9/16/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	142	0.1	325.3
Sulfate	202	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,205	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.42	0.05	243.2
Carbonate	444	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	370	1.0	310.1
Nitrate	0.012	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



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## Analytical Report

**REPORT NUMBER: AL-4966-4**

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-15, 9/17/03

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	106	0.1	325.3
Sulfate	285	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,195	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.40	0.05	243.2
Carbonate	507	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	448	1.0	310.1
Nitrate	0.029	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director

ANCHEM0409



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## Analytical Report

**REPORT NUMBER: AL-4966-5**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-16, 9/17/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	269	0.1	325.3
Sulfate	70	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,030	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	1.09	0.05	243.2
Carbonate	720	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	600	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



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FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-13**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-17, 9/16/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	170	0.1	325.3
Sulfate	215	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,675	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	0.26	0.05	236.1
Manganese	ND	0.05	243.2
Carbonate	570	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	475	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



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## Analytical Report

**REPORT NUMBER:** AL-4966-7

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-21, 9/17/03

**DATE RECEIVED:** 09/18/03

**DATE REPORTED:** 09/23/03

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	142	0.1	325.3
Sulfate	230	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,296	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.64	0.05	243.2
Carbonate	552	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	460	1.0	310.1
Nitrate	0.019	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



**AmeriChem  
Testing  
Laboratory**

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## Analytical Report

**REPORT NUMBER: AL-4966-11**

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-18, 9/18/03

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	298	0.1	325.3
Sulfate	85	1.0	375.4
Sulfide, dissolved	1.92	0.05	376.1
TDS	1,655	5.0	160.1
Ferrous iron	4.55	0.05	Colorimetry
Iron (total)	14.4	0.05	236.1
Manganese	7.0	0.05	243.2
Carbonate	1,146	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	985	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director

ANCHEM0413





**AmeriChem  
Testing  
Laboratory**

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Orange, CA 92865

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FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-6**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-20, 9/17/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	92	0.1	325.3
Sulfate	215	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	1,235	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.12	0.05	243.2
Carbonate	519	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	433	1.0	310.1
Nitrate	0.170	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director

ANCHEM0414



**AmeriChem  
Testing  
Laboratory**

1761 N. Batavia St.  
Orange, CA 92665

(714) 921-1550  
FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-14**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-23, 9/16/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

<b>ANALYSIS</b>	<b>TEST RESULT mg/l</b>	<b>DET. LIMIT mg/l</b>	<b>METHOD EPA</b>
Chloride	71	0.1	325.3
Sulfate	115	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	630	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	ND	0.05	243.2
Carbonate	282	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	235	1.0	310.1
Nitrate	0.177	0.01	353.3

TDS= Total dissolved solids

**Peter T. Wu  
Lab Director**



**AmeriChem  
Testing  
Laboratory**

1761 N. Batavia St.  
Orange, CA 92865

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FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-15**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-24, 9/16/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	74	0.1	325.3
Sulfate	154	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	775	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	0.10	0.05	236.1
Manganese	0.07	0.05	243.2
Carbonate	306	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	255	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



**AmeriChem  
Testing  
Laboratory**

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Orange, CA 92865

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FAX: (714) 921-4770

## Analytical Report

**REPORT NUMBER: AL-4966-16**

**CLIENT:**

**STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640**

**REPORT ON:**

**Water sample  
MW-25, 9/16/03**

**DATE RECEIVED: 09/18/03**

**DATE REPORTED: 09/23/03**

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	85	0.1	325.3
Sulfate	210	1.0	375.4
Sulfide, dissolved	ND	0.05	376.1
TDS	870	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	ND	0.05	236.1
Manganese	0.09	0.05	243.2
Carbonate	420	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	350	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director



**AmeriChem  
Testing  
Laboratory**

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Orange, CA 92865

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# Analytical Report

**REPORT NUMBER:** AL-4966-8

**CLIENT:**

STS Environmental Lab.  
7801 Telegraph Rd. suite J  
Montebello, CA 90640

**REPORT ON:**

Water sample  
MW-26, 9/17/03

**DATE RECEIVED:** 09/18/03

**DATE REPORTED:** 09/23/03

ANALYSIS	TEST RESULT mg/l	DET. LIMIT mg/l	METHOD EPA
Chloride	326	0.1	325.3
Sulfate	60	1.0	375.4
Sulfide, dissolved	16.6	0.05	376.1
TDS	1,460	5.0	160.1
Ferrous iron	ND	0.05	Colorimetry
Iron (total)	0.44	0.05	236.1
Manganese	5.21	0.05	243.2
Carbonate	804	2.0	Standard Method 4500
Bicarbonate	ND	2.0	Standard Method 4500
Total Alkalinity	670	1.0	310.1
Nitrate	ND	0.01	353.3

TDS= Total dissolved solids

Peter T. Wu  
Lab Director